**THE ERCIS NETWORK**

ERCIS – the European Research Center for Information Systems – is an international network of scientists conducting cooperative research in the field of Information Systems (IS). The network was founded in 2004 at the University of Münster and is funded by the German State of North Rhine-Westphalia and the University of Münster.

The Network provides new ways of thinking and multi-disciplinary approaches for finding solutions to the problems arising from an ongoing transformation of society and organisations due to the growing impact of IT. ERCIS has dedicated itself to dealing with these challenges through collaboration and exchange of information between research and practice.

ERCIS is notable for excellent communication and exchange of information between research and practice. The Network is headed by the Board of Directors in Münster, which is composed of one academic director, namely Prof. Dr. Jörg Becker, and eight additional professors all active in the IS research field. Moreover, ERCIS involves numerous internationally renowned researchers from more than 20 Associated Research Institutions, Personal Members, as well as members of the Advisory Board coming from diverse industry companies.

All ERCIS research partners are experts in a wide variety of disciplines related to IS. Research conducted by ERCIS ranges from fundamental research to application-oriented research. Besides individual research activities of ERCIS members, the Network brings together and supports selected research aspects of IS in Competence Centres aimed at strengthening research in specific areas. The Advisory Board members come from various industry sectors, which guarantees that the research conducted at ERCIS is relevant for practice. Regular meetings of the Board of Directors with the Advisory Board members, as well as annual workshops of ERCIS’ associated research institutions, ensure continuous, direct and productive exchange of knowledge.

Finally, students and young researchers also benefit from collaboration at ERCIS, as many ERCIS research partners offer exchange programs that last one or two semesters, which gives students an opportunity to acquire international experience. Joint lectures and guest talks organised by several ERCIS members contribute to the internationalisation of teaching.

If you are interested in connecting with the Network, please feel free to contact us! For further information please visit www.ercis.org.

**PREFACE**

DEAR FELLOW ERCIS PARTNERS AND INTERESTED READERS OF THIS REPORT,

Celebrate good times – come on! We have had several occasions this year to come together and celebrate. First and perhaps the biggest celebration: It was the network’s 15th anniversary that we celebrated during several events this year. On the 3rd of May, we had our big anniversary event, where we invited all ERCIS partners and friends to Münster to reflect about the past and discuss about the future. In addition to all those festivities, we, again, successfully applied for several new joint projects, welcomed new academic ERCIS members as well as advisory board members and spent time together on various events, be it conferences, workshops, or guest lectures around the world. Find out more about everything that has happened by reading this year’s “anniversary issue” of our Annual Report!

Several EU-funded projects that influenced our work in the network during the last years, were successfully brought to an end. In 2019, the RISE_BPM project, the MASTIS project, the EQUALIST project and many more left their footprint in the network and the consortia already think about following applications to continue the collaboration in the future. Following the smooth collaboration within the RISE_BPM project, we asked the University of Sevilla if they would like to join the ERCIS network as a new institutional member in Spain. We then invited them to this year’s Annual Workshop to present themselves to the other network members. In addition, we invited the IE Business School from Madrid to also present themselves as potential new institutional members, since Isabel Ramos from the University of Minho recommended them. Both Spanish Universities left a very good and committed impression and the ERCIS board of directors decided in October to affiliate both Universities as institutional members in Spain.

Talking about new ERCIS members: In addition to the new Spanish partners we finally signed the ERCIS certificate with the University of Sao Paolo (USP) in Brazil. Thus, a warm welcome to USP and, before you wonder about why Brasil becomes a member of a European network: I always like to talk about “Greater Europe” when I talk about ERCIS! It is about the people we want to work with whether they are located in Brasil, or the US, New Zealand, Australia, or South Korea: they all belong to our growing ERCIS family around the world! The USP certificate was signed during our Annual Workshop in Loughborough this year. You cannot imagine the beautiful surrounding of an old mansion and the surrounding english garden that the organizers of the workshop selected for our workshop dinner. Just have a look at the article about this year’s Annual Workshop in this context. Thanks again, Crispin Coombs, Peter Kawalek, Chris Holland, Boyka Simeonova and Ruth Cullifin for hosting us this year! We had a wonderful time in the UK and regardless of all political unpredictability, I am looking forward to great collaborations with you in the future! For next year, Dariusz Król invited us to the University of Wrocław in Poland and I am really looking forward to visit this beautiful town again.

In addition to all those reasons for celebrating the ERCIS network, I personally had one big reason to commemorate: It was my 60th birthday at the beginning of this year and Katrin Berger, Armin Safran, and Michael Räckers gave me a big surprise by handing over a honorary publication with the title “The Art of Structuring”. I was overwhelmed when I realized that so many ERCIS partners contributed to this book as authors. Thus, let me thank you all again for this great conspirational ERCISI endeaoure! I really didn’t have a clue that something this huge was in preparation (I should definitely have a closer look at what my staff does behind my back).

Looking back at this great year of celebrations, I am proud to see so many different activities that were possible because of all of us being members and contributing to the ERCIS network. It truly is “ERCIS – it’s what we make of it!”

All the best,

Jörg Becker
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2004
- Founding of the ERCIS Network
  + Copenhagen Business School (Denmark)
  + Aarhus University of Technology (Denmark)
  + Queensland University of Technology (Australia)
  + Turku School of Economics (Finland)
  + University of Gdansk (Poland)
  + University of St. Gallen (Switzerland)
  + Vienna University of Economics and Business (Austria)

2005
- Establishment of the first Competence Centers
  First ERCIS@ECIS
  + Kedge Business School (France)
  + Vlerick Business School (Belgium)

2006
- First Joint EU project (PICTURE)
- First Advisory Board Meeting
  + Charles University in Prague (Czech Republic)

2007
- First Network Meeting in Münster
  + University of Liechtenstein (Liechtenstein)

2008
- First ERCIS Launchpad
  + National Research University – Higher School of Economics Moscow and Nizhny Novgorod (Russia)
  + Stevens Institute of Technology (USA)

2009
- First Annual Report
- First Doctoral Consortium on the Ijsselmeer
  + University of Waikato (New Zealand)

2010
- First of the Annual Workshop Series in Liechtenstein
  + Duisburg-Essen University (Germany)
  + University of Appel (Netherlands)

2019
- It was time to meet and look back in time, reflect on the now, and peek into the crystal ball. Together with the 50th anniversary of the School of Business and Economics of the University of Münster, we invited the Department of Information Systems alumni, international partners, advisory board members, and friends to still one of the “most liveable cities in the world”. The 100 slots were booked in no time, which resulted in a full house.

Before lunch break, the attendees were introduced to some exhibitions that take place at the Headquarters in the form of Pecha Kucha talks by Dr. Nico Clever (Design Thinking in Virtual Reality), Dr. Bettina Distel (Trust in a Digital Society: Whom to trust?), Dr. Christian Grimme (Towards the Investigation of Fake News: A Gamified Approach), Jana Mattern (Finding patterns of sustainable high-performance work), and Prof. Dr. Stephan Meisel (LearnIT: Maximizing the Business Value of Energy). For each of the talks, a small exhibition invited the guests to try out the presented artefacts.

The event concluded with a panel about “IS Challenges of the Next Decade”, featuring Prof. Dr. Isabel Ramos of the University of Minho, Portugal, as representative of our International Partner Network; Adam Widera, representing the Competence Center Crisis Management; Wolf von Wendt, representing our Advisory Board member CLAAS; and Prof. Dr. Jens Poppeltbühl as one of our Personal Members. The panel was moderated by Prof. Dr. Jörg Becker. Concluding, one of the biggest challenges, aside from the ones the environment poses to us (also thanks to us humans), is strengthening collaborative research and education to be able to tackle those.

We are committed to do exactly that!

2011
- University of Twente (Netherlands)

2012
- First ERCIS Virtual Seminar

2014
- Luleå University of Technology (Sweden)
- University of Porto (Portugal)

2015
- Munster hosted the 23rd European Conference on Information Systems (ECIS)
- KU Leuven (Belgium)
- Simon Kuznets Kharkiv National University of Economics (Ukraine)

2016
- Pohang University of Science and Technology (South Korea)
- University of Leiden (The Netherlands)

2017
- Guimarães hosted the 25th ECIS
- National University of Ireland, Galway (Ireland)
- Tallinn University of Technology (Estonia)
- Wroclaw University of Science and Technology (Poland)

2018
- Loughborough University (UK)
- Annual Workshop in Luleå, Sweden, 2018
- Our 2018 Advisory Board Meeting in Munster

2019
- Welcoming the University of São Paulo (USP) as new member during the 2019 Annual Workshop in Loughborough, UK
- IE Business School (Spain)
- University of São Paulo (Brazil)
- University of Sevilla (Spain)

2020
- Hosting the 27th European Conference on Information Systems in Munster
- First "ERCIS Disrupts Munster"

Celebrating 15 years of the ERCIS Network, May 17, 2019
Following the traditional structure, the ERCIS annual workshop started with a welcome reception at the Elite Athletes hotel on the university campus. After a warm welcome by Tom Jackson, the Associate Dean [Research] of the School of Business and Economics and Peter Kawalek, the director of the Centre for Information Management (CIM) at Loughborough University, Armin Stein, the managing director and leads performance analysis for the ERCIS Network, gave a retrospective on the ERCIS, talked about how every member who also presented themselves and their universities. Since both are from Spain, it was important to clarify that the members in Loughborough, held an interesting talk about “Loughborough Sport: The Winning Formula? People, Analysis & Peripherals”. He gave us some insights on how games and training sessions are analyzed to improve the individual and team performance. While having supper and drinks together, the welcome reception ended with many great conversations in a relaxed atmosphere.

The first workshop day started at the West Park Teaching Hub with a recap of the activities and projects of the network since the last Annual Workshop in 2018 by the academic director of the ERCIS, Jörg Becker. Afterwards our newest member of the network, the University of São Paulo (USP) introduced by Marcelo Fantinato. Welcoming the network! We look forward to continuing our fruitful collaboration.

Also, we had two applicants for a membership who also presented themselves and their universities. Since both are from Spain, it was important to clarify that the areas in which they operate differ and possibly complement each other.

Álvaro Arenas presented the Information Systems and Technology Department of the IE Business School of the IE University in Madrid and Manuel Resinas presented the ISA – Ingeniería del Software Aplicada (Applied Software Engineering) of the Department of Computer Languages and Systems of the University of Seville. We are very happy to welcome both universities to our network!

This session was followed by Crispin Coombs (CIM Loughborough) who explained the plan for the afternoon workshop on the ERCIS paper theme: “What is it about humanity that we can’t give away to machines”. Afterwards Patrick Stacey gave a great talk, which inspired the participants for the discussion in the afternoon. He finished his presentation “Towards a New Humanism. Or are we too late?” with four themes for the afternoon session: Crime & Conflict, Jobs, Attention, and Wellbeing.

After lunch, the afternoon started with Crispin Coombs explaining everything regarding the workshop, which took place in the style of a world café. The discussion took place in three rotations on four tables, one for each theme from the inspiration session before lunch. Each table had a table host that stayed on the table and collected the discussion using post-its on table flip-charts and gave feedback to the whole group. Besides, the table hosts are co-authors of the paper and wrote up the discussion that took place on their table. The afternoon session closed by a final wrap up from each of the hosts who summarized the aspects of the discussions at their table for the whole group of participants.

In the evening, we went to a fantastic location for the workshop dinner. Prestwold Hall, a country house in Leicestershire, was the perfect place to end the day while enjoying the sunset in the beautiful garden and having great conversations over dinner. Additionally, we had the Official Signing Ceremony where Jörg Becker, Marcelo Fantinato and Bernd Hellingrath signed the USP’s Certificate of Membership.

On the last day of the workshop, we had a recap on recent activities of the ERCIS Competence Centers. The Competence Center Digital Transformation in SMEs presented the Virtual Open Innovation Lab (VOIL) project in which several ERCIS partners (WWU, UMINHO, KTU and UiA) are involved. Afterwards, it was all about funding calls, possibilities for collaboration in projects and teaching. After a warm farewell by our hosts, the workshop closed with a joint lunch before everybody took the journey back home.
HONORARY PUBLICATION “THE ART OF STRUCTURING”

“The Art of Structuring – Bridging the Gap Between Information Systems Research and Practice” – is the title of a publication in honor of Jörg Becker’s 60th birthday. With 83 authors from 35 countries involved, the book gives various insights on how to structure models, data, processes, organizations, and technologies as well as visionary chapters on the topic. The publication was handed over during the WI conference in Siegen on the 25th of February 2019. Colleagues, friends, as well as long-term companions from the IS community gathered for a secret party and successfully managed to surprise Jörg Becker with the party as well as his “Festschrift”.

SHORT NEWS

BEST PAPER AWARD FOR ERCIS RESEARCHERS

Hui Wang, Michael Emmerich, and Aske Plaat (LIACS) have been rewarded the Best Paper Award at the BNAIC Conference for their work on classical reinforcement learning for general game playing. The conference was held in November 2019, in ’s Hertogenbosch, The Netherlands, and annually brings together ca. 100–150 researchers of the Benelux Artificial Intelligence Community.

LECTURE NOTES IN INFORMATION SYSTEMS AND ORGANIZATION INVITES SUBMISSIONS

The Springer series Lecture Notes in Information Systems and Organization (LNIS/O), started in 2012 by the LIUSS IS group, invites ERCIS members to propose new volumes. LNISO is a series of scientific books that explore the current scenario of information systems, in particular IS and organization. The focus on the relationship between IS and organization is the common thread of this collection, which aspires to provide scholarly exchange across the world with a point of reference and comparison in the study and research of information systems and organization. LNIS/O is the publication forum for the community of scholars investigating behavioral and design aspects of IS and organization. Among others, ERCIS partners from Italy, Switzerland, and Liechtenstein are on the series editorial board.

ER CIS WEL COMES THREE NEW INSTITUTIONAL MEMBERS AS WELL AS SEVERAL VERY YOUNG PERSONAL MEMBERS

The Network is happy to welcome two new Institutional Members from Spain: The University of Seville, and the IE Business School (IEBS) from Madrid! The University of Seville (UoS) will be represented by Adela del Rio Ortega and Manuel Resinas. Research topics are Software Engineering, Cloud and Services, and Business Process Management. IEBS will be represented by Alvaro Arenas. The research in Madrid focusses on Digital Innovation, Information Security and Privacy, Analytics and Machine Learning, and the Economy of Information Systems.

After a long-lasting fruitful collaboration between the University of São Paulo (USP, Brazil) with the Brazil Centre of the University of Münster, the USP became the first official ERCIS Institutional Member in South America! USP will be represented by Marcelo Fantinato.

Furthermore, we welcome Iris Maria from the University of Liechtenstein, and Leonhard Adam from the University of Münster! It also seems that Nina (Vienna University of Economics and Business) enjoys wearing her personal ERCIS Body!

COLLABORATION OF ERCIS MEMBERS IN CHAIRING THE ECIS2020 TRACK N°20: DIGITIZED ACTING IN DIGITAL SOCIETIES: THE BRIGHT AND THE DARK SIDE OF ONLINE COMMUNITIES

University of Minho (Isabel Ramos) is co-chairing the track 20 of ECIS2020 – Digitized acting in digital societies: the bright and the dark side of online communities. The other co-chairs that are members of ERCIS are Øystein Sæbø (University of Agder) and Alessio Braccini (individual member at Università degli Studi della Tuscia). The track is also co-chaired by Tommaso Federici from Università degli Studi della Tuscia in Italy. The track invites submissions that critically address the online communities’ domain to further the debate on their bright and the dark sides, by contributing to the knowledge on how they affect people and organizations in digital societies. ECIS2020 is now accepting submissions and until November 29th, 2019.

UNIVERSITY OF LIECHTENSTEIN RELEASES FOURTH AIS GLOBAL INFORMATION SYSTEMS EDUCATION REPORT

At the end of 2019, the fourth collection of global information systems education is released by Prof. Dr. Jan vom Brocke (University of Liechtenstein), Prof. Dr. Bernhard Tan (National University of Singapore), Prof. Dr. Heikki Topi (Bentely University, Waltham, Massachusetts, USA), and Dr. Markus Weinmann (Erasmus University Rotterdam, Netherlands). This report, the most comprehensive collection of study programs in the field of information systems worldwide, contains more than 3,300 courses offered in more than 450 programs in 43 countries. By editing this report, the University of Liechtenstein takes a leading role in fostering competencies in the digital economy environment.

STUDENT EXCHANGE PROGRAMME BETWEEN THE UNIVERSITY OF MÜNSTER AND POSTECH

The University of Münster and POSTECH have made an agreement about student exchange programmes. This agreement will be an excellent opportunity for promoting student exchange opportunities between the two universities. This partnership will help students acquire international experiences in Europe and Asia while building technical expertise in their respective fields.

KICK-OFF MEETING OF THE PROJECT VIRTUAL OPEN INNOVATION LAB (VOIL)

On November 4–5 the Kick-Off meeting of the project VOIL took place (ERASMUS+ KA203 – Strategic Partnerships for higher education) in Münster. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform SMEs. The project is coordinated by the University of Muenster and includes nine partners in seven European countries. Three other partners belong to ERCIS: Kaunas University of Technology, University of Agder, and University of Minho.

EUROSYMPOSIUM 2019 IN GDANSK

On 19th of September 2019, the Department of Business Informatics at the University of Gdańsk, Poland, organized an annual conference, the 12th Eurosymposium 2019, under auspices of AIS SIGSAND group. The participants, including the keynote speakers, Prof. Matti Rossi, Immediate Past President of AIS, presented 13 papers. The papers were published in Springer series LNBIP.
Service Science research addresses different aspects of servitization - the integration of industrial machinery with customized service offerings without selling physical goods. Our research is focused on understanding and facilitating the creation of value in service systems, which involves interactions between service providers and service customers. The goals of the Service Science team are to develop a sound theory on service phenomena and to design innovative IT artifacts supporting competitive edge of the service economy.

In recent years, a rapid increase in racist, political and religiously motivated hate commentary has led many newspaper editors to deactivate their online comment functions on their websites. While this is understandable from an economic point of view for the individual publishers, serious problems for the public discourse arise in view of restriction quotas of up to 50%. The MODERAT! project aims to use an integrative and interdisciplinary approach to develop software tools and a web platform that will enable operators to moderate web debates with significantly less effort. Comments are pre-analyzed automatically, so that a smaller total number of comments have to be reviewed manually. In this way, media houses and publishers should be able to offer web debates again on their own websites and thus enter into a more active exchange with the readership.

For more information, please visit: https://www.moderat.nrw/
The integration of clinical and molecular data, especially analysis of next-generation sequencing in cancer research, is a well-established focus of the institute with national and international cooperations for many years. The rapid increase in data volumes of high-throughput sequencing in molecular medicine ("big data") poses constant challenges from an informatics point of view.

A major proportion of the data needed for clinical studies is also relevant for routine patient care. At present, data for studies and patient care are managed in separate systems. Hence, design and efficient implementation of interoperable information systems in healthcare is a major research topic. Open Metadata is key for interoperability. Specific research topics are data models with semantic annotations and models with semantic annotations and methods for metadata management. Application fields are EHR and electronic data capture (EDC) systems.

**CURRENT RESEARCH PROJECTS**

**Digital Health**

The world-wide largest public portal of medical data models (https://medical-data-models.org) is managed by IMI. It is a registered official European Research Infrastructure. To date it contains 21,000+ data models and 500,000+ data items with semantic annotations. These data models are available in 18 download formats, in particular CDISC ODM, HL7 FHIR and openEHR ADL. MDM has 1,400+ users worldwide. Recently, GIs in Spanish, Italian, French, Portuguese, Swedish and Dutch were added. The IMI project mobile patient questionnaires (http://mapat.uni-muenster.de) integrates EHR and patient reported outcomes. Currently this software tool is applied successfully in a large European study with multilingual data collection in the field of dermatology and in the DFG clinical research unit "Translational Pruritus Research" (CRU 2690). Several new projects regarding Medical Apps were started in 2019.

**Biomedical Informatics**

IMI participates in the DFG clinical research group "Male Germ Cells" (CRU 326).

The work on MDS-RIGHT, a European project coordinated by Nijmegen University, is progressing to analyse mutations in Myelodysplastic Syndrome (MDS). MDS-RIGHT assesses approximately 1000 patient cases with Next-Generation Sequencing (NGS) technology. IMI performs bioinformatics for project partners from the Netherlands, France, Sweden and Spain. About one third of MDS patients develop leukaemia - the objective of the project is to improve diagnostics and therapy using biomarkers from NGS.

**Research in the context of the German Medical Informatics Initiative. Münster is actively involved in the use case infection control: a software system is developed to analyse various data sources from hospitals, with the aim to detect potentially dangerous germs as early as possible. This automated early warning system will help to protect patients from new infections, but also to understand their causes and how infectious diseases spread.**

**PUBLICATIONS**


IMI is now part of the HiGHmed-Consortium (www.highmed.org), which is funded by the Federal Ministry of Education and Research in the context of the German Medical Informatics Initiative. Münster is actively involved in use case infection control: a software system is developed to analyse various data sources from hospitals, with the aim to detect potentially dangerous germs as early as possible. This automated early warning system will help to protect patients from new infectious diseases, but also to understand their causes and how infectious diseases spread.
Digitalized Supply Chain: Digitalization is a research topic in supply chain management, considering the application of new technologies like machine learning or data analytics methods for improved services. The group focuses on approaches like cloud computing, Artificial intelligence, and digital platforms to address challenges such as supply chain security, predictive maintenance, and supply chain risk management.

RESEARCH TOPICS
- Digitalized Supply Chain: Digitalization is omnipresent and has enormous impacts on supply chains. Emerging technologies like cloud computing, Artificial intelligence, and digital platforms are part of digitalized supply chains. The research group explores application possibilities and investigates digitalization levers that affect business models.

- Industry 4.0: Research regarding Industry 4.0 aims to keep and enhance the competitive advantage of German manufacturing companies worldwide. The group is developing methods to evaluate the applicability of decentralized production architecture for different types of manufacturing processes in practice. Furthermore, their implementation is analyzed from the Enterprise Architecture perspective.

- Predictive Maintenance / Spare Parts Management: The early identification of machine breakdowns by condition monitoring enables more precise planning and management of spare parts and maintenance services. The group focuses on approaches and data analytics methods for improved diagnostics and prognostics in predictive maintenance, which have been successful-ly applied with several companies. Moreover, decision support for collaboration and coordination of actors in corresponding spare parts supply chains is developed.

- Sales & Operations Planning (S&OP): Nowadays, cross-functional integration within a company and along the supply chain is essential for business success. S&OP is a tactical planning process that addresses this challenge by continually aligning decisions in sales, marketing, product development, finance, and operations. The group investigates state-of-the-art S&OP implementations and develops concepts to facilitate efficient industrial applications.

- Humanitarian Logistics: Supply chain and logistics management are crucial for effective disaster response. The group conducts research on modeling, performance measurement, and simulation of humanitarian supply chains as well as the design and evaluation of supporting information systems.

EVENTS
- Within the project DRIVER+, several events took place:
  a. In April, the DRIVER+ Trial Guidance Methodology was identified as a potential standard for assessing innovations in Crisis Management by the German Institute for Standardization (DIN). For this purpose, a CEN Work-Shop Agreement (CWA) was initiated to explore the interest of the community further. The CWA is chaired by Prof. Dr.-Ing. Hellingrath and should be finalized by April 2020.
  b. In May, Prof. Dr.-Ing. Hellingrath and Adam Widera co-chaired the Logistics and Supply Chain Management track at the 16th International Conference on Information Systems for Crisis Response and Management in Valencia, Spain.

- In January and June, Prof. Felipe Scavarda from PUC in Rio de Janeiro visited our group. During this time, Prof. Scavarda gave a business administration lecture about Supply Chain Logistics Management and actively engaged in the S&OP research conducted by the group.

- In 2019, the chair celebrates its 50th anniversary. During the last ten years, almost 200 scientific works, including 15 journal papers, 125 conference papers, and 30 chapters in books were published. Additionally, more than 250 theses were completed, over 160 seminars conducted, and over 55 lectures held. Moreover, over 125 student assistants supported the chair.

- The chair engaged in a project with the local administration of Recklinghausen. Eight students developed a digitalization concept for cemeteries. Moreover, Prof. Dr.-Ing. Hellingrath gave a talk about digitalization in waste management at the state symposium of NRW.

PUBLICATIONS

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Dr. Thomas Hoeren is a professor of civil law at the University of Münster and has been the director of the ITM since 1997.

The ITM is involved in several projects:

**Art Law Clinic**
- **Projects:** Research focuses on Information Law, Telecommunication Law and Media Law as well as related areas such as Antitrust and Consumer Protection Law. Since this field of research is characterized as a cross-sectional matter, it cannot be fully covered by any of the traditional legal disciplines by itself. The ITM, therefore, strives for interdisciplinary research and teaching activities.

**CURRENT RESEARCH PROJECTS**
- **Art Law Clinic:** A project in cooperation with the Academy of Fine Arts Münster. Its basic idea is: “Law students for art students”. Art students can seek help of law students in senior classes to solve basic legal problems, which occur during their academic studies. The service is entirely free and coordinated by employees of the ITM and the Academy of Fine Arts Münster. Additionally, a legal guideline has been provided, giving students an overview of art law. By combining the inherently different but closely connected topics of law and art, the project will increase the interdisciplinary and mutual understanding between the students and their respective subjects.

**GOAL**
- Governance and algorithmic law (GOAL) is our latest research project on algorithms and AI (kick-off: November 2019). The research investigates how algorithms can perform governance functions and how governance of algorithms can be designed. The goal of GOAL is the identification of governmental, technical, and regulative needs and options for action to design comprehensive governance structures. This can contribute to legal and investment security by becoming a building block of the digital economy. In the project network, computer scientists, lawyers, ethicists, behavioral scientists and economists conduct joint interdisciplinary research on technology assessment.

**Matters of Law in the German Research Network (DFN):** The DFN (Deutsches Forschungsnetz) provides a communication network for universities and research facilities in Germany as well as the University of Münster. The project aimed at monitoring and assessing current developments regarding Big Data, taking into account public opinion and bringing together expert knowledge. Several research groups and external researchers worked on interdisciplinary in-depth studies, which were presented in expert workshops and a national symposium. Moreover, three citizens’ conferences and a representative opinion survey have been carried out to ensure an extensive involvement of the public. On this basis, all relevant issues have been analyzed and evaluated to provide options for political decisions, further research and economic approaches, also pointing out alternatives. Initiated in March 2015, the project ended successfully in May 2019.

**Regulatory Sandbox Blockchain NRW:** The project, which is funded by the state of North Rhine-Westphalia, was launched in September 2019. Its aim is to test and develop practical implementations of blockchain technology in different economic sectors. To achieve this, the Regulatory Sandbox will allow cooperation between researchers from diverse scientific fields and businesses as well as start-ups. The ITM lends its support to the Fraunhofer Institute for Applied Information Technology FIT by providing the legal perspective.

**Research Center for Industrial Property Rights:** The ITM also hosts the Research Center for Industrial Property Rights, which offers training and conducts research activities in the field of industrial property rights, trying to connect science and economic research. The Research Center is supported by an association of companies, lawyers, and patent attorneys.

**ABIDA**
- **Assessing Big Data** was an interdisciplinary research cluster funded by the Federal Ministry of Education and Research (BMBF) focusing on social, legal, political, ethical and economic research with regard to Big Data. The project was managed by the ITM and the Institute for Technology Assessment and System Analysis in Karlsruhe (ITAS). Furthermore, the Berlin Social Science Center (WZB), the Technical University Dortmund, the Ludwig–Maximilians-University Munich as well as the University of Hannover were project partners. The project aimed at monitoring and assessing current developments regarding Big Data, taking into account public opinion and bringing together expert knowledge. Several research groups and external researchers worked on interdisciplinary in-depth studies, which were presented in expert workshops and a national symposium. Moreover, three citizens’ conferences and a representative opinion survey have been carried out to ensure an extensive involvement of the public. On this basis, all relevant issues have been analyzed and evaluated to provide options for political decisions, further research and economic approaches, also pointing out alternatives. Initiated in March 2015, the project ended successfully in May 2019.

**RWTH Foundation Assistant Professorship of IT Law:** This professorship promoted young researchers in the field of IT law. Prof. Dr. Nikolaus Guggenberger, LLM (Stanford) held this position from fall of 2016 until September 2019. His research focused on law and innovation, specifically on the implications of blockchain technology, smart contracts and the automation of law. As the newly appointed Executive Director of the Information Society Project at Yale University, he will maintain a position as an external lecturer.
University of Münster – Chair for IS and Interorganizational Systems

Interorganizational Systems Group

About the Institution

Our research explores the impact of information and communication infrastructures in an organizational context. We are interested in the development of the digital organization: how do organizations and leaders respond to the challenges and opportunities of an informed society and economy? We study new modes of organizing, coordination and collaboration from the micro level of work practices, to the meso level of group practices, and the macro level of infrastructure development.

We aim to understand the dynamics of transformation in a historical, societal, regulatory, and economic context. Our work is theoretically and empirically grounded, we employ multiple methods and research approaches with an emphasis on qualitative, interpretative approaches.

It is our research philosophy that the implications of innovative ICT become visible and understandable in the context of (communities of) practices. In order to study practices in situ, we advocate approaches, which facilitate research and experimentation in complex real world settings, addressing business or societal innovation. Typically multiple stakeholders and researchers from different disciplinary backgrounds are involved.

Research Topics

We pursue this agenda through three, interrelated fields of research.

1. The Communication & Collaboration Management group, led by Dr. Simeon Vidolov, is broadly concerned with understanding the role of technologies, knowledge and collaborative processes, both within and between organizations and broader social networks. The principal aim of the group is to promote the critical study of communication, coordination and collaboration practices that are seen as central to the relationship between technology, organization, and societal change. A prominent focus in our research is the examination of the material and affective aspects of organizational and social life, and the practices through which they are being mediated and performed. Some of our research themes include:

- Virtual and distributed forms of working and organizing,
- Collaborative practices and trust in complex network arrangements,
- Role of affectivity and embodiment in process of learning and collaboration,
- Critical approaches to project management, and its performative and political properties,
- Enterprise social networks and workplace analytics.

2. The Research Group on Strategic Information Management (RG SIM), led by Dr. Alexander Teubner, does research on the management challenges that executives with information and technology responsibility face in the Digital Age. The following challenges are in the focus of the group’s currently research:

- IT/IS Strategies for the Digital Age: Which issues should top-managers consider when devising IT strategies? How to devise IT/IS strategies and how to align them with business strategies?
- Digital Transformation and Techno-change: How to align changes of the IT-based infrastructure with organizational change? How to plan, control and coordinate large, complex and risky IT endeavours comprising a larger set of interrelated IT projects?
- IT/IS Investment Evaluation and Control: What kind of IT investments should digital organizations make? How to decide on IT-investment alternatives? What is the business value of IT investments? How to control the IT/IS investment portfolio for value delivery?
- IT Outsourcing and Organization: Which IT tasks can and should be outsourced and what are appropriate sourcing modes (offshoring vs. nearshoring, single vs. multi-vendor sourcing)? Alternatively, how to best organize the in-house IT/IS function in digital organizations?

3. The Interorganizational Systems group studies the development and transformation of interorganizational information infrastructures and related theoretical and methodological questions. Specifically we study:

- how to facilitate collective action in heterogeneous actor constellations or coalitions,
- how governance models, including multi-sided platforms, ecosystems, commons-based peer production, blockchain governance, emerge in digital environments,
- how industry structures, specifically structures of intermediation, are transformed alongside the proliferation of ICT.

We study these issues specifically in the context of the health care sector, travel & tourism, and the academic publishing industry.

Current Research Projects

IT/IS Strategy in the Digital Age (Dr. J. Stockhinger, Dr. A. Teubner)
Digitalization has fundamentally transformed the business world and put into question traditional strategy wisdom. Given that IT is the fundamental driver behind this transformation, new strategic management challenges do not only emerge in the business realm but even more so in the IT/IS domain: to prosper in the digital age, it is imperative for C-level IT executives to have a clear overview over the peculiarities that digitalization brings about. This knowledge then allows them to weigh on the implications for the planning domains at the heart of IT/IS strategy: the corporate IT/IS infrastructure and the IT/IS function. Consequently, our research aims at clarifying what is meant by IT/IS strategy in the digital age, what critical issues it should address and how IT/IS strategies relate to the emerging concept of “digital strategy”.

From artifact to infra-structure – The prescription as intellectual and material vantage point to the design of social infrastructure (Dr. S. Schellhammer, AWU, Dr. M. Avci, RWTH)
IS scholars from RWTH Aachen and WVU Münster will work with pharmaceutical historians from the Philipps University of Marburg and the German Pharmacy Museum in Heidelberg to investigate the formation and development of a cornerstone of today’s healthcare system – the drug prescription. It will create one of the largest digital collections of prescriptions from the early modern period to modern times in German-speaking countries. The Federal Ministry of Education and Research will support this project over the next 4 years with a volume of approximately 1 million Euro.

Interorganizational Ambidexterity (Prof. D. Vieru, TELUC University, Montréal, Prof. S. Klein)
We study, how companies use interorganizational collaboration in order to efficiently balance exploration and exploitation and extend their ambidextrous capabilities in the context of small and medium size IT service providers.

Preliminary findings demonstrate diverse practices of how these companies combine the pressure to report billable hours and maintain a culture of innovation and learning. Project debriefings and cross-project learning are key mechanisms to achieve ambidexterity. Innovations driven by the IT vendors are carefully scrutinized and assessed with respect to the relevance for the customer segments and the appropriate timing for market entry and roll-out. Prof. Vieru was the recipient of a DAAD fellowship for visiting professors and spent 3 months in Muenster.

Blockchain as Organizational Technology (Prof. S. Klein, in collaboration with UCD)
The project explores governance modes of permissioned blockchain initiatives and associations.

Development of Digital Platforms in Health Care (Prof. S. Klein, in collaboration with FU Berlin)
The project studies examples of digital platforms in health care, their network configurations, value propositions and operating logics and their dynamics over time.

Surveillance Capitalism in Academic Publishing (Dr. S. Vidolov, Prof. S. Klein plus collaborators)
The project examines the transformation of academic publishing at the intersection of the managerialist turn in academia and the morphing of leading publishing houses into information analytics companies, aiming to become the information infrastructure for academia.

Selected Publications


Chair of Practical Computer Science


Dissertations

Christoph Rieger: Model-Driven Software Development – Cross-Platform App Development and Further Applications of Domain-Specific Languages.

Andreas Fuchs: Automated Test-Case Generation with Symbolic Execution.

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ABOUT THE INSTITUTION
Heike Trautmann is head of the Information Systems and Statistics group as well as a director of ERCS. Together with Christian Grimme she leads the ERCS Competence Center “Social Media Analytics”. Currently, she is also Vice Dean for Internationalisation at the Münster School of Business and Economics. Her team contributes to the research areas of Data Science and Big Data, Artificial Intelligence, Social Media Analytics, (Multi-)Objective Optimisation, Evolutionary Computation as well as Automated Algorithm Selection and Configuration in international and industrial collaborations.

RESEARCH TOPICS
Some of the most challenging real-world problems involve the systematic and simultaneous optimisation of multiple conflicting objectives. As most of those Multi-Objective Optimisation problems cannot be solved exactly, we apply optimisation techniques from Evolutionary Computation to approximate optimal compromises.

In the context of Algorithm Benchmarking, the group evaluates the performance of nature-inspired techniques and constructs to algorithm design from an empirical as well as a theoretical perspective. Algorithm Selection deals with the selection of the best suited algorithm for a given problem in an automated fashion. Methodologically, identified problem properties are matched to known algorithms’ performance (Exploratory Landscape Analysis). Artificial Intelligence and machine learning techniques, in particular deep learning and classification approaches, play a fundamental role in constructing accurate and efficient selection models. Together with the Configuration and Selection of Algorithms (COSEAL) research group, the team is strongly involved in this area focusing on vehicle routing and continuous optimisation.

Moreover, the group is highly interested in designing automated algorithm configuration and selection strategies operating on data streams. Matthias Camein successfully initiated a collaborative research group with experts of the University of Waikato, New Zealand, during a research stay funded by the BMVIT. The research group focuses on the detection and disinformation attacks in online media (Projects PropStop and Mitigation of Online Propaganda: The ERCIS Omni-Channel Lab powered by Arvato, or propaganda and disinformation detection in online media (Projects PropStop and Moderat, Competence Center Social Media Analytics).

CURRENT RESEARCH PROJECTS
DemoESDigital (https://www.demoesdigital.uni-muenster.de): "Democratic resilience in times of online-propaganda, fake news, fear- and hate speech". This junior research group is supported by the Digital Society research programme funded by the Ministry of Culture and Science of the German State of North Rhine-Westphalia and associated with the Department of Communication at WWU Münster and the Information Systems and Statistics Group.

Moderat! (https://www.moderat.net) The project aims to use an integrative and interdisciplinary approach to develop software tools and a web platform that will enable operators to moderate web data with significantly small effort. Comments will be analysed automatically, so that only a small number of critical comments have to be viewed manually.

PropStop (www.propstop.de/?lang=en), funded by the BMVIT. Detection, Analysis and Mitigation of Online Propaganda: The PropStop project, which ended this year, is concerned with the detection of propaganda and disinformation attacks in online media. The ERCIS Omni-Channel Lab - powered by Arvato (https://omni-channel.ercis.org) (2016-2019) combines knowledge from research and experience from practice to innovate omni-channel customer relationship management.

The COSEAL (configuration and selection of algorithms) research group (http://www.coseval.net) is an international consortium of researchers which addresses current challenges from Algorithm Selection, Algorithm Configuration and Machine Learning. The group strongly supports the joint European initiative CLAIRE (Confederate of Laboratories for Artificial Intelligence Research in Europe, www.claire.ai) that seeks to strengthen European excellence in AI research and innovation.

AWARDS
Matthias Camein, Heike Trautmann, Le-schek Homann and Gottfried Vossen received the Best Paper Award at CBI 2019 (Conference on Business Informatics) in Moscow for their paper "A Recommender System Based on Omni-Channel Customer Data".

EVENTS
In February, the group organised the 1st Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM) in Hamburg, Germany.

In March, the whole group had a 2-day research workshop at "Landhaus Rothen-burg".

In September, Jakob Bossek was invited to the 7th Heidelberg Laureate Forum bringing together the most exceptional mathematicians and computer scientists of their generations.

PUBLICATIONS


In Proceedings of the 7th Heidelberg Laureate Forum bringing together the most exceptional mathematicians and computer scientists of their generations.

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In Proceedings of the 21st IEEE Conference on Business Informatics (CBI’19), Moscow, Russia.


In Proceedings of the 10th International Conference on Evolutionary Multi-Criterion Optimization (EMO), East Lansing, MI, USA.


In Proceedings of the 10th International Conference on Evolutionary Multi-Criterion Optimization (EMO), East Lansing, MI, USA.


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In Proceedings of the 21st IEEE Conference on Business Informatics (CBI’19), Moscow, Russia.


Algorithmic Bias in Machine Learning

Automated decision-making has become indispensable in our daily lives. Due to this fact, these decisions should be fair or unbiased. Research about algorithmic bias encounters systematic and repeatable errors in computer systems that create such unfair outcomes. For this reason, algorithmic bias has become one of the hottest topics of Machine Learning and also a new research interest of the DBIS Group. The right way to deal with bias, however, is anything but a triviality. Machine Learning tasks usually come with a high degree of complexity, specific requirements, and a large number of possible influencing factors. In such a sophisticated setting, it is imperative to take bias management steps to enable consistent AI-based decision-making processes. The DBIS Group is particularly interested in the interlinking of business processes and data to analyze suitable starting points for fair AI.

Digitalization of Companies – Digi-Check

Digitalization of companies is a current research effort of the DBIS group. To initiate or drive forward digitalization efforts, the status concerning digitalization, i.e. the digital maturity of the company, must be determined first. Therefore, the DBIS group has developed a maturity model that can capture the current digital maturity level of a company. It includes the three primary dimensions Processes, Data, and Business Model as well as the four secondary dimensions Connectivity, Interaction, Optimization, and Disruption. Based on these dimensions, we have developed a digitalization check (short Digi-Check) in the form of a questionnaire that consists of statements for each of the dimensions. The user indicates the degree to which she or he agrees with these statements. In the end, the Digi-Check evaluates the digital maturity and presents the results by using a radar chart that indicates the digital maturity for each dimension. Furthermore, it is possible to vary the weighting of the score in each dimension for the calculation of the overall digital maturity. Our Digi-Check is available online at: https://d-check.uni-muenster.de

AWARDS
Best Paper Award, 21st IEEE Conference on Business Informatics (CBI) 2019, Moscow, Russia, for “A Recommender System Based on Omni-Channel Customer Data,” by M. Carem, L. Homann, H. Trautzmann, G. Vossen.

EVENTS
- Regular meetings of the TDWI Roundtable as well as of the GI Regional Group Münsterland.
- ERCIS Launch Pad, annually in Münster, in 2019 on 27th November.

PUBLICATIONS
M. Carem, L. Homann, H. Trautzmann, G. Vossen: A Recommender System Based on Omni-Channel Customer Data; Proc. 21st IEEE Conference on Business Informatics (CBI) 2019, Moscow, Russia, 65 – 76 (Best Paper Award),


ABOUT THE INSTITUTION
Vienna University of Economics and Business (WU Vienna) is reportedly the biggest business school campus in Europe. The Department of Information Systems and Operations at WU Vienna was founded in the course of WU’s organizational restructuring in 2005. Since then, it has consolidated the know-how and reputation of five highly renowned institutes and 16 professors with distinguished focuses in research and teaching, providing a broad representation of IS research topics. Our Bachelor’s Program in Information Systems is recognized as Austria’s leading representation of IS research topics. Our Department of Information Systems & Operations consists of five institutes. The Institute for Information Systems ambitiously attempts to follow in these successful steps. It provides information Systems was designed together with a board of leading Austrian stakeholders from industry and government to meet today’s challenges and to provide a solid basis for tomorrow’s demands.

RESEARCH TOPICS
The department of Information Systems & Operations consists of five institutes. The Institute for Information Business conducts research in the area of business- and technology-driven innovations with a specific focus on business process management, data management, and knowledge management. The Institute for Information Management and Control’s focus is on responding to the needs of organizations and societies in regard to information and technology management, especially considering accountability. The research areas of the Institute for Information Systems and New Media emphasize two major areas: new media, in particular computational media, active media, polymorphic media, and information systems, in particular highly flexible systems and application engineering. The Institute of Management Information Systems aspires to use a wide range of methods to contribute to the development of sustainable technology aspects. The institute’s aim is to be a think tank for business and society that focuses on the sustainable design of information technology. The Institute for Production Management concentrates on research in the area of supply-chain management.

CURRENT RESEARCH PROJECTS
The FFG project Agilework, a project to investigate Human Centered AI in Digitized Working Environments and work out a roadmap for tackling the acceptance and awareness gap of artificial intelligence (AI) in digitized working environments, has started in the beginning of October. The project is led by Software Competence Center Hagenberg (SCCH), with (KU Linz, PROFACTOR), apollo.ai, Plattform Industrie 4.0 and WU Vienna as partners.

The EU project Knowledge Graphs at Scale (KnowGraphs), an international Training Network (ITN) with the common research goal to scale knowledge graphs technologies to be accessible to a wide audience of (1) companies of all sizes and (2) end users across their professional and private life by using a multi-disciplinary and multisecto\onal approach, has started in October 2019. The project is coordinated by University of Paderborn, with WU being one of overall international 7 partners.

The Erasmus+ project “Reference Module Design for Explorative Business Process Management” is a joint collaboration together with the University of Liechtenstein (project coordinator) and the University of Bayreuth. It aims to investigate the innovation potential of business process management and targets to transfer the latest research outputs back into education as input for teaching. The project has started in December 2018 and has a duration of two years.

AWARDS
Svetlana Vakulenko and her colleagues received the Best User Paper Award of the 41st European Conference on Information Retrieval (ECIR 2019) with the paper: Svetlana Vakulenko, Kate Revoredo, Claudio Di Ciccio, Maarten de Rijke: “QGRAF: A Data-Driven Model of Information-Seeking Dialogues”.

Monika Malinova Mandelburger received the Best Reviewer Award of the BPM conference 2019 together with Saken Debois, and Jorge Munoz-Gama.

EVENTS
This year’s Austrian Computer Science Day (ACSD) took place on 5 June 2019 at WU Vienna, organized by Axel Polleres (https://acsd2019.ai.wu.ac.at). The ACSD is an annual assembly that brings together computer scientists across Austria and beyond to improve visibility of the field and foster collaboration in research and teaching. This year’s ACSD ran under the slogan “Business meets Computer Science”. The highlights of the event were a keynote given by the rector of WU Vienna, Prof. Edeltraud Hanappi-Egger, a panel discussion on the role of research in the field of Artificial Intelligence in Austria, and a “Young Experts” session where a selection of PhD students were invited to present their work.


SELECTED PUBLICATIONS


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KU LEUVEN – LEUVEN INSTITUTE FOR RESEARCH ON INFORMATION SYSTEMS & PUBLIC GOVERNANCE INSTITUTE

ABOUT KU LEUVEN
Situated in Belgium, in the heart of Western Europe, KU Leuven has been a centre of learning for nearly six centuries. Today, it is Belgium’s largest university and, founded in 1425, one of the oldest and most renowned universities in Europe. KU Leuven is a research-intensive, internationally oriented university that carries out education, research and service activities worldwide. It is strongly inter- and multidisciplinary in focus and strives for international excellence.

Following the integration of the university colleges, the ‘entire’ KU Leuven counted 57,286 students as of February 2018. The largest student populations are found in the faculties of Economics and Business, Medicine, Engineering Technology, Arts, and Law. Students from approximately 163 countries study at KU Leuven.

LIRIS
The Leuven Institute for Research in Information Systems (LIRIS), founded in 1987, coordinates research in the area of information technology and management in organizations. This research embodies: fundamental issues of information systems in organizations, applied research, and research on the use and implications of information systems throughout society. The LIRIS Faculty currently counts 7 professors, 2 postdocs and around 35 PhD researchers.

PUBLIC GOVERNANCE INSTITUTE
The KU Leuven Public Governance Institute has the mission to gain knowledge and insight regarding politics, administration and public policies on local, regional, federal, European and national levels. We intend to make scientific contributions to an improvement in the policy-making, organization and management of public administrations.

The KU Leuven Public Governance Institute is an internationally oriented and interdisciplinary research institute that focuses on different aspects of public governance. Both fundamental and applied research are part of our activities with special attention to theory, empirical research and practice. Comparative research in particular is one of our core competencies.

RESEARCH TOPICS
The research focuses on the entire trajectory of assessing the as-is business situation through (discovery, analysis, mining), modelling the concepts, improving the model to obtain the to-be situation, and engineering the model to an implementation. This integrated approach of models, rules, decisions, processes, and structures aims at creating innovative business solutions and is referred to as Business Engineering. It combines knowledge from the fields of business administration as well as information technology and relates it to the transformation from the industrial society into an information society, where creation, integration, processing, management and use of information and knowledge is a significant economic activity.

Important research topics of LIRIS are:

• analysis, modelling and architecture of information systems;
• knowledge discovery, data and process mining;
• architecture and infrastructure;
• data, process and decision modelling;
• business data, process, service, rules and decision management;
• information strategy.

Public Governance Institute focuses on three distinguishable but partly overlapping clusters within the public governance domain:

Politics, citizens and policies: this research cluster focuses on the understanding of the relationship between governments, citizens and policy practices.

Administrative organization and HRM: this cluster focuses on the changes in the governmental landscape and the way in which the government handles its human capital.

Management of information, performance and finance: this cluster focuses on research about methods and approaches to manage, use and exchange information by governments in the policy, management and financial cycles. This may be within as well as between administrative organizations, but also across and between governments.

CURRENT RESEARCH PROJECTS
Research projects within LIRIS are conducted in four major areas:

Engineering information solutions: Engineering information solutions, dealing with conceptual modelling, data quality and requirements management is a first important area. It allows creating innovative solutions based on sound modelling principles and aligned with the business.

• KBC Research Chair, A Data Quality Framework for Effective Risk Data Aggregation and Risk Reporting (2015–2019).

Business processes intelligence
A second important area is business processes intelligence. This includes some important new contributions to the theory of process analytics and discovery, and applies process analytics to specific new domains (auditing, learning, service, customers and administrative processes), giving rise to auditing analytics, e-learning analytics, service analytics, etc.


Business decision management
Business decision management (modeling, mining and implementing decision representations and business rules) is an area with a long tradition in LIRIS. The research recently led to an industry standard, DMN (Decision Model & Notation), adopted by the OMG.

• TETRA (Technology Transfer) project, Decision Analytics (2017–2019).

Business Analytics & Data Science
In close collaboration with a world-wide network of companies and fellow researchers, we study various research topics within the field of data science. Another key research track concerns the development of social network based analytical models for fraud detection, credit risk modelling and marketing analytics (e.g. churn prediction).

• KBC Research Chair, A Data Quality Architecture and Infrastructure; (2015–2019).

Important new contributions to the theory of auditing systems intelligence, giving rise to auditing analytics, e-learning analytics, service analytics, etc.

• A Digital Flemish Government (DigiVO) (2017–2020).


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JOURNAL PUBLICATIONS


Dissertations

06.05.2019, Sandra Mitrović, “On feature engineering and network representation learning for Telco Churn prediction”.


Books


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LIRIS RESEARCH CHAIRS WITH INDUSTRY

The Business Information Systems group has a long tradition in industry-funded research chairs. This partnership with industry is a strong valorization of the research efforts and a good source of relevant research questions. Some current research chairs in business processes, decisions and information management:

ING Research Chair: Applying deep learning on metadata as a competitive accelerator.

Brussels Airport Chair: Smart airport operational analytics.

Belfius Research Chair: Analytics-based selling.

EDUCATION

Erasmus+: Higher Education Joint Master Degrees – Master of Science in Public Sector Innovation and eGovernance together with Westfälische Wilhelms-Universität Münster – University of Münster and Tallinn University of Technology

BESTSDI – Western Balkans Academic Education Evolution and Professional’s Sustainable Training for Spatial Data Infrastructures. Erasmus+ Cooperation for innovation and the exchange of good practices


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Supporting Children with Down Syndrome

The goal of this project is to develop an intelligent information system to support children with Down Syndrome, through repetitive training, to communicate verbally with greater confidence, fluency and resourcefulness. Based on machine learning and pattern recognition, the system must learn about the children’s difficulties and potentials to guide them through the process of speech enhancement in a consistent, interactive, and adaptive manner. Project conducted at FFCLRP.

Mobile and Web Accessibility and Interoperability

Developing applications which are accessible for handicapped users can be difficult, tedious, and error prone. This project aims to create model-driven software development solutions that enable the easy development of accessible web applications and apps for mobile devices. A generator can transform a high-level description of an application into code which ensures the accessibility for all users. Project conducted at ICMC.

ABOUT THE INSTITUTION

The University of São Paulo (USP), founded in 1934, is the leading institution of higher education and research in Brazil. USP is a free public university with open access to students selected for an entrance exam. USP forms a large part of Brazilian masters and PhDs and alone accounts for over 20% of all national research production, delivering on average almost 50 research papers per day. There are seven university campuses in the state of São Paulo; the main campus is in the city of São Paulo, the state capital. The university has nearly 50 schools and institutes covering all areas of knowledge. There are about 250 undergraduate programs and 250 graduate programs serving almost 100,000 students.

The School of Arts, Sciences and Humanities (EACH), created in 2005, is an interdisciplinary unit of USP that brings together 11 undergraduate and 11 graduate programs in different areas of knowledge. Within these, we act in the Bachelor’s in Information Systems graduate program, with nearly 20 faculty members. Our graduate program in information systems has two broad research lines – “systems management and development” and “systems intelligence” – both with strong appeal in applied computing. Two other USP units with a strong presence in the information systems and applied computing area are the Institute of Mathematical and Computer Sciences (ICMC), in the campus of São Carlos, with nearly 50 faculty members, and the School of Philosophy, Science and Literature (FFCLRP) with the Department of Computing and Mathematics, in the campus of Ribeirão Preto, with nearly 15 faculty members.

CURRENT RESEARCH PROJECTS Process Mining

The quality of business processes running in organizations is of utmost importance in achieving the organization’s strategic goals. This project aims to explore key machine learning and computational intelligence techniques to discover advanced process knowledge for process and organizational improvement. Project conducted at EACH.

Smart Toys and Companion Robots

Smart toys are becoming more attractive to children and their sales may increase considerably soon. This project seeks to propose solutions for both toy makers and risk-prone. This project aims to create model-driven software development solutions that enable the easy development of accessible web applications and apps for mobile devices. A generator can transform a high-level description of an application into code which ensures the accessibility for all users. Project conducted at ICMC.

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The quality of business processes running in organizations is of utmost importance in achieving the organization’s strategic goals. This project aims to explore key machine learning and computational intelligence techniques to discover advanced process knowledge for process and organizational improvement. Project conducted at EACH.

Smart Toys and Companion Robots

Smart toys are becoming more attractive to children and their sales may increase considerably soon. This project seeks to propose solutions for both toy makers and risk-prone. This project aims to create model-driven software development solutions that enable the easy development of accessible web applications and apps for mobile devices. A generator can transform a high-level description of an application into code which ensures the accessibility for all users. Project conducted at ICMC.

关于项目

支持唐氏综合症儿童

该项目的目标是开发一个智能信息系统，以支持唐氏综合症儿童，通过重复性训练，以提高其言语交流的自信、流畅和资源丰富性。基于机器学习和模式识别，该系统必须学习儿童的困难和潜力，以指导他们通过语音增强过程的一致性、交互性和适应性。项目在FFCLRP内进行。

移动和Web无障碍和可操作性

开发可访问的应用程序对于手残用户来说是困难的、繁琐的，且易出错。该项目的目标是创建基于模型的开发软件开发解决方案，以实现无障碍的Web应用程序和移动设备应用。生成器可以将高层次的描述转化为代码，确保所有用户的访问性。项目在ICMC内进行。

を利用した研究プロジェクト

プロセスマイニング

組織内のビジネスプロセスの質は、組織の戦略目標の達成に最重要です。このプロジェクトの目的は、キーマシンリーニングとコンピューターサーチエンジンを行うための高度なプロセス知識を探索するためのプロセスと組織の改善を進めるということです。当EACHで実施されます。

スマートテイクとコンパニオンロボット

スマートテイクは、子供たちに人気を増し、その販売は急激に増えることが予想されています。このプロジェクトは、おもちゃメーカーとリスクを伴う。このプロジェクトの目的は、モデル制御のソフトウェア開発解�
The natural sciences have been a part of the research teaching at the Charles University since its founding in 1348. The Faculty of Mathematics and Physics has been created by separating a part of the Faculty of Natural Sciences on 1 September 1952. Now, it is composed of three schools: School of Physics, School of Mathematics, and School of Computer Science.

The School of Computer Science at the Faculty of Mathematics and Physics includes eight prestigious teaching and scientific workplaces. The quality of their graduates is widely recognized. Among them are a number of top experts working as computer program developers and technological innovators. They are as successful as entrepreneurs. Members of the School of Computer Science achieve outstanding scientific results in discrete mathematics, especially in graph theory and its applications in intelligent systems, optimization, especially in graph theory and its applications, efficient processing of graph data (XML, RDF, linked data), ontologies, Web 2.0, and semantic web services. Recently, the Big Data, Linked Data, and graph databases research are at the forefront of the group.

The Department of Software Engineering focuses on research and teaching in the areas of database systems, semantic web, similarity search, Bioinformatics & Cheminformatics, XML technologies, parallel computing, Big Data, and e-Science.

**RESEARCH TOPICS**

There are three research groups in the department.

**Similarity RETrieval Research Group (SiRet)**

http://siret.mff.cuni.cz/

SiRet was founded in 2006 at the Department of Software Engineering, Faculty of Mathematics and Physics, Charles University in Prague. SRG deals with database methods for efficient and effective similarity search in databases of complex unstructured objects. In particular, SRG is interested in three areas – general methods of indexing similarity (metric and non-metric spaces), biological applications of the similarity search, and indexing image databases for content-based retrieval.

**XML and Web Engineering Research Group (XRG)**

http://www.ksi.mff.cuni.cz/xrg/

The XML and Web Technologies Research Group (XRG) focuses on XML and Web technologies and their exploitation, service-oriented architectures (design, implementation, and management), evolution, change management and adaptability of applications, efficient processing of graph data (XML, RDF, linked data), ontologies, Web 2.0, and semantic web services. Recently, the Big Data, Linked Data, and graph databases research are at the forefront of the group.

**Parallel Architectures/Algorithms/Applications Research Group (PARG)**

http://www.ksi.mff.cuni.cz/parg/

The Parallel Architectures/Algorithms/Applications Research Group focuses on multi-core CPUs and NUMA servers programming, many-core GPUs and GPGPU computing, utilization of emerging parallel architectures (Intel MIC, Parallel/Epiphany), distributed computing on tightly coupled clusters, parallel data processing, concurrency in database systems, and languages (and compilers) for parallel processing.

**CURRENT RESEARCH PROJECTS**

The department members are involved in a number of research projects funded by the Czech Science Foundation and the Technology Agency of the Czech Republic. The projects concern three scientific areas: The projects concern three scientific areas: Bioinformatics & Cheminformatics (e.g., Molpher – Software tool for exploration of the chemical space; P2Rank – Ligand-binding site prediction; PyS – Protein structure similarity search; and others), General indexing (e.g., PGRTree – Plugin for Indexing Multidimensional Data in PostgreSQL using R-tree), and Multimedia (e.g., Find the image – Online tool for comparison of different multimedia exploration approaches; Multimedia exploration framework – Creation of efficient multimedia exploration applications, user preference analytics in multimedia exploration models; SIR – Smart image retrieval; Web Image Extractor – Image feature signatures extractor demo implemented in web browser; Sketch-based Video Browsing – An interactive video retrieval tool for known-item search tasks, and others).

**AWARDS**

Fourier Prize 2019 – the best research works in computational science were awarded the Fourier Prize in Prague at the end of June. Ladislav Maršík, a Ph.D. student of the Department of Software Engineering, made it to the shortlist and presented the results in his doctoral thesis “Cover Song Identification using Music Harmony Features, Model and Complexity Analysis”. His work belongs to the field of Music Information Retrieval.

**PROJECTS**

The projects concern three scientific areas: Bioinformatics & Cheminformatics (e.g., Molpher – Software tool for exploration of the chemical space; P2Rank – Ligand-binding site prediction; PyS – Protein structure similarity search; and others), General indexing (e.g., PGRTree – Plugin for Indexing Multidimensional Data in PostgreSQL using R-tree), and Multimedia (e.g., Find the image – Online tool for comparison of different multimedia exploration approaches; Multimedia exploration framework – Creation of efficient multimedia exploration applications, user preference analytics in multimedia exploration models; SIR – Smart image retrieval; Web Image Extractor – Image feature signatures extractor demo implemented in web browser; Sketch-based Video Browsing – An interactive video retrieval tool for known-item search tasks, and others).

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**SUMMARY**

The research teaching at the Department of Software Engineering focuses on three scientific areas: Bioinformatics & Cheminformatics, XML technologies, parallel computing, Big Data, and e-Science.

**CONTACT DETAILS**

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ABOUT THE INSTITUTION
The Department of Digitalization (DIGI) is one of the largest IT Management departments in Europe. DIGI is a multi-disciplinary department that embraces theories and methods from the fields of information systems, business administration, computer science, organization studies, political science, economics, sociology, psychology, and communication theory. The mission statement of the department is: Co-creating knowledge with enduring consequences through the study of the interrelationships among people, information and technology.

The Association of Information Systems (AIS) is the core community of the department. The AIS community is inclusive and open to all the current research areas of the department. With our journal contributions to the Senior Scholars’ Basket of Journals we are ranked number two in Europe. DIGI is a multi-disciplinary and cross-disciplinary department that embraces theories for the fast-moving pace and radical innovation that characterizes the IS research field. We achieve this by organizing part of our research around themes that address societal or business challenges. The themes are topical, popular, inter-disciplinary and dynamic in nature. In addition to the research themes, DIGI still maintains the more traditional research areas for the disciplinary development of its researchers.

The faculty and administrative staff of the department are primarily teaching within the following degree programs: Bachelor in Business Administration and Information Systems, Bachelor in Information Management, MSc in Business Administration and Information Systems and the MSc in IT (eBusiness).

RESEARCH TOPICS
The Department of Digitalization conducts research within the following research areas related to information technology and information systems: Design, Implementation, Use and exploitation and Information management.

The research at DIGI is organized around a number of cross-disciplinary themes and we cover a number of research areas like the sharing economy, future of work, mergers and acquisitions, social media, cashless society, internet of things, or open big data.

Themes are emergent, topical, inter-disciplinary and dynamic in nature. They emerge from bottom up activities where researchers find that they share a common excitement about a new phenomenon and encompass several tenured faculty members who meet regularly about a common research phenomenon over a longer period of time.

Example Research Theme IoT. The group ‘Internet of Things’ (IoT) has the objective to create an Internet of People and Societies by creating multidisciplinary and cross-disciplinary approaches with researchers, politicians, citizens, NGO’s and enterprises pursuing socially productive scenarios in the merging of our physical world and the virtual world.

RECENT PROJECTS
The Consistently Optimized Resilient Glob al Secure Global Supply Chain (Core) project will consolidate solutions developed in Reference Projects in each supply chain sector (port, container, air, post). Implementation-driven R&D will be then undertaken to discover gaps and practical problems and to develop capabilities and solutions that could deliver sizable and sustainable progress in supply chain security across all EU Member States and on a global scale.

Center for Business Data Analytics. The Center for Business Data Analytics (csBA) celebrates its first year at the Department of Digitalization of the Copenhagen Business School. It conducts transdisciplinary basic research at the socio-technical intersections of computer science and social science with specific applications to managers in companies, teachers in schools and residents in cities.

Big Social Data Analytics. CBS DIGI received a 6.2 m DKK grant from the Danish Industry Foundation and starts a research project on big social data analytics. The research project is case based and can, by building new analytical models that collect big data streams from company databases, websites and social media such as Facebook, Instagram, Pinterest, Twitter and LinkedIn, provide companies with necessary algorithmic approaches to address current business challenges.

Cashless Society. The vision behind “Cashless Society” is to make Denmark the first cashless society in the world. Compared with the rest of the world, the Danish based approach is unique, and the cashless society will only further strengthen Denmark’s international competitiveness. The idea of a cashless society leads to a number of issues and challenges that will be explored and investigated. Some of the key research questions are: How does the digitization of money affect the use and experience of money? How does the digitization of transactions influence the performance of and preference for different payment systems? How can we design a digitized payment ecosystem? The complexity in the challenges requires us to apply multi methodological approaches ranging from anthropological studies, field studies, experiments, and design science in close collaboration with practice, including, the Danish Bankers Association, NETS, Dansk Bank, Cell Point Mobile, IBM, and Innovation Lab.

PUBLICATIONS
Qi yang; Chun-Hao Tan; Choon Ling Sing; Kwok-kee Wei / Followship in an Open-source Software Project and Its Significance in Code Reuse. In: MIS Quarterly, 43, No. 4, 14, 2019.


Philipp Hulak; Nicholas Berente; Matt Germonprez; Aaron Schoter / Bots Coordinating Work in Open Source Software Projects. In: Computer, Vol. 52, No. 9, 2019, p. 52-60.


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Throughout the three fields, RND specializes uniquely on interdisciplinary research at the interface of public policy and implementation. Our research looks at how policies are implemented and how the implementation processes feed back into policymaking and in fact change policies. RND deals with evolutionary changes in policy and implementation practices. This approach can be applied to all areas of policymaking and human activity where governments have any role to play.

The main research topics of RND are:

- Innovation, innovation strategies, innovation policies and economic development (Technology Governance)
- Governance, public management reforms and catching-up processes
- E-government and e-governance
- Small states and public management
- Small states and innovation policy and development
- Financial policies and economic development
- Regional policy and regional development
- Philosophy of science

This year, Prof. Robert Krimmer was listed in the second annual list of the World’s 100 Most Influential People in Digital Government, with his research focused on electronic participation and democracy, as well as e-voting, the transformation of the public sector, and developing digital societies.

Funding project: “Internet Voting as Additional Channel for Legally Binding Elections: Challenges to Voting Process Reengineering”. The project’s duration is 48 months – 1 January 2017 until 31 December 2020 – and has a budget of 50,000 Euros. With general decline of voter turnout in established democracies around the world, a number of countries have started to look into adding alternative means of voting, including internet and postal voting resulting in complex multi-channel elections. The aim of this project is to conduct empirical research into why such offerings are being undertaken and how they influence and change the voting process and governance thereof, as well as answering the question of how the adding removing of internet voting and other channels affects the overall associated costs.

RND has also participated in the RTE (Real-Time Economy Project). This short research project explored the emerging concept of ‘real-time economy’ (RTE) – the idea that buying, selling, reporting, and other business transactions could take place via real-time machine-to-machine data exchange instead of human-mediated manual processes.

**PUBLICATIONS**


Sae, R.-M. (2019). Mobility in Smart Cities: will Automated Vehicles Take it over? In: Smart Governance for Cities: Perspectives and Experiences. Springer


**Dissertations**

The roots of the Institute for Information Systems Science were established in year 1971. Nowadays the Institute is a part of the Department of Management and Entrepreneurship at the University of Turku. The mission of the Institute is to educate professionals, who master both, general management, as well as Information Systems skills. In research, the Institute focuses on supporting companies in their Information Systems management. Issues at individual, industry, national and international level are not neglected. The Institute has a track-record and long tradition of conducting action research dating back to the 1980s. Today, the competence of the faculty members covers the whole methodological spectrum from qualitative to quantitative research.

Despite being in a business school, the Institute has a rich tradition in the public sector and third sector organisations. E-health is a good example of this, where the role of public service is essential. Research is done from the viewpoint of different organisational stakeholders: organisation’s top management, Information Systems management, as well as individuals such as customers or workers. Recent developments put emphasis on the management and organisational aspects of data security and privacy, as well as IT governance issues.

ABOUT THE INSTITUTION
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CURRENT RESEARCH PROJECTS
The Institute runs a rich portfolio of projects in different areas. Current examples contain issues such as Business Strategy, digital strategy, governance and management of IT, governance of data, data integration and federation, blockchain and distributed ledger technologies, IT management best practices; CIO/CDO work, ICT in small and medium sized enterprises, process modeling, master and reference data management, preparing for the health social services renewal in Finland, information system continuity management, management of waste flows, ethical issues within IT, behavioral and social aspects of digital and social media, adoption and diffusion of technological innovations, young people & information technology, freemium business models, virtual worlds, networks and business models, gender in ICT education and hospitality management.

PUBLICATIONS


The focus of the research activities within the institute lies within understanding the utilisation of information and communication technology in enterprises and other organisations. The research conducted within the institute covers most of the key areas of Information Systems. The research activities can be classified into four themes:

- Management of Information Systems and Business Information Systems
- Networks and Business Models
- Work Informatics
- Healthcare Information Systems

In terms of research methods used, the institute has a track-record and long traditions of conducting action research dating back to the 1980s. Today, the competence of the faculty members covers the whole methodological spectrum from qualitative to quantitative research.

The University of Turku is a multidisciplinary scientific university located at the Southwest coast of Finland, in the vibrant student city of Turku. With over 25,000 students and 3,500 employees, the University of Turku is one of the largest universities in Finland. The Institute for Information Systems has three full professors and a total staff of about 25 employees with approximately 20 active doctoral level students. The yearly admissions for students to the bachelor level, having Information Systems science as their major subject, is around 15 of the annual admission of 250 of the whole Business School. Yearly, in addition, there are approximately 40 master level students in the two international master’s programs of the institute: Global Information Systems Management and International Master in Management of Information Technology. Information systems is a popular minor for students of many areas of Economics, Business Administration as well as Computer Science.


INSTITUTION AT A GLANCE
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KEDGE BUSINESS SCHOOL – DEPARTMENT OF OPERATIONS MANAGEMENT AND INFORMATION SYSTEMS

ABOUT THE INSTITUTION
KEDGE is a leading French business school with four campuses in France (Paris, Bordeaux, Marseilles and Touloen), three abroad (Shanghai, Suzhou and London) and three partner campuses (Avignon, Bastia and Bayonne). The KEDGE community is made up of 12,600 students (including 25% coming from abroad), 189 professors (including 44% coming from abroad), 275 international academic partners, and 65,550 alumni around the world.

KEDGE Business School is AACSB, EQUIS and AMBA-accredited, and is a member of the Conférence des Grandes Ecoles. It is also recognised by the French government, with renowned programmes, and has obtained the EESPIG label. KEDGE was ranked 40th by the Financial Times in the world in its Executive MBA ranking.

CURRENT RESEARCH PROJECTS
1) e-commerce and hyperconnected urban distribution
As part of the agreement for the creation of the “La Poste Supply Chain Chair” in collaboration with La Poste, which runs France’s leading logistical and network, and Kedge Business School, this industry project aims to meet the challenges of e-commerce and logistics inherent to its customers’ new consumption methods, requirements and usages. The objective of this project is to optimize the last-mile delivery of parcels in a soft mode using a decision-support system to improve the quality of parcel delivery operations. This agreement enables KEDGE to provide forward-looking research work, innovative business models, with the consideration of technological, environmental or societal factors to its corporate partners.

Contact: walid.klibi@kedgebs.com, larissa.belgouzia@kedgebs.com

2) Machine Learning Applications in Beauty Care Sephora
KEDGE BS employs machine learning methods in the new research project for Sephora, the French multinational chain of personal care and beauty stores, with which the school has long-standing corporate relations. The aim is to optimize omnichannel distribution and implement advanced forecasting for basket analysis and improve the shipping process.

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3) Cloud Computing Transformation and its Strategic Values
This research work investigates the challenges associated with the strategic value dimensions of cloud computing using an exploratory study of 125 cases of companies, covering 17 distinct economic sectors, spread over all continents considering contingency factors such as culture, size, and structure. It provides methods to be distinguishable in a market characterized by a marketable transformation model meeting their clients’ requirements. The objective of this project is to measure organizational requirements and managerial strategic objectives as specific indicators, which allow for classification of these dimensions. To identify these dimensions, objectives, challenges, implemented solutions, and results of the transformation to cloud computing are analyzed.

Contact: gautier.stauffer@kedgebs.com, larissa.belgouzia@kedgebs.com

PUBLICATIONS


DISSEMINATIONS/HABILITATIONS
Imen Ben Mohamed (2019). “Modeling and solution approaches for the stochastic two-echelon distribution network design problem”, Supervised by François Vanderbeck, University of Bordeaux and Walid Klibi, Operations Management and Information Systems Department, KEDGE BS.

The conference “Smart Cities: how the data and AI could help in optimizing logistics” was held on June 25th, 2019, on the KEDGE BS campus. More than 50 KEDGE alumni participated in this event organized as a round-table with professionals of the sector.

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KEDGE BUSINESS SCHOOL – Department of Operations Management and Information Systems

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Lero NUI Galway  resides within the J.E. Cairnes School of Business & Economics. Lero NUI Galway offers a wide range of undergraduate and postgraduate courses, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five Colleges, 16 Schools, and over 50 academic disciplines.

**About the Institution**

NUI Galway was founded in 1845 and has grown massively in size and reputation over the past 170 years. According to QS World University Rankings, the University is now among the top 1% in the world. NUI Galway offers a wide range of undergraduate and postgraduate courses, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five Colleges, 16 Schools, and over 50 academic disciplines.

Lero NUI Galway resides within the J.E. Cairnes School of Business & Economics. Lero NUI Galway offers a wide range of undergraduate and postgraduate courses, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five Colleges, 16 Schools, and over 50 academic disciplines.

**Research Topics**

Our research concentrates on the following key areas: agility, temporality, open innovation, project portfolio management.

**Agility**

The growing popularity of agile/lean methods such as Scrum and Kanban indicate a strong desire to improve how we work and create value for customers. Despite many potential benefits of agile/lean adoption, there is no recipe to follow that will guarantee success. We examine agile methods within industry settings and further contribute to the concept and customisation of agile methods.

**Temporality**

Researchers are quick to refer to time in simple terms such as speed of organisational and social life. Our research explores time as an inherently complex, multi-faceted, subtle and complex phenomenon. This includes the evaluation of the true ‘velocity’, speed and value afforded by analytics and methods such as agile and flow.

**Open Innovation**

Open Innovation and the associated domains of crowdsourcing, crowdfunding and inner source software are changing the way organisations run projects. While there has been much focus in practice about the use of these methods, little reflection exists upon the theory and processes that underpin the concept. As organisations are faced with increased competition in the innovation space, new methods are needed to form the next generation of innovative products.

**Project Portfolio Management**

This gap in the literature becomes even more pertinent when we consider that contemporary implementations of agile/lean go beyond small co-located teams with non-standard implementations now widespread – i.e., large and distributed teams or start-ups. This presents new challenges for the scaling of agile/lean and requires a rethink of project portfolio management.

**Current Research Projects**

A core activity is the researcher-industry knowledge exchange. These exchanges take place every three months and provide evidence-based insights on software implementation and management issues. This enables Lero NUI Galway to create tangible research outcomes that are immediately applicable to organisations setting. The team works with multinationals such as Dell, AIB, Accenture, and Markit | Information Mosaic to deliver solutions to software agility issues.

Currently, the team looks at areas such as: (I) social network analysis of multiplex information flow, with a particular emphasis on open and networked innovation and the role of information and communication technologies within these paradigms, (II) the use of open innovation strategies and practices across, public, private and philanthropic organisations, (III) the socio-technical aspects of information systems development (ISD) (Lean, Flow, Scrum) and the emphasises on viewing ISD as evolving activity systems (teams, organisations) beyond a single user, (IV) software engineering and productivity, with a particular emphasis on open start-up approach and practices in large and established organisations (V) information systems project portfolio management through the lens of complex adaptive systems theory, (VI) temporality within the context of ISD.

The Lero team at NUI Galway have now established a “Time and Technology” group. This group will examine how technology is radically shaping not only the pace and rhythms of work, performance, and life more generally, but also the overall human experience of time. An emerging and interdisciplinary research programme examines these complex phenomena from the perspectives of business analytics, psychology, sociology and computer science, exploring a diverse range of topics including the velocity afforded by analytics and methods such as agile and flow, the role of technology in societal pace and rhythms of life, temporality and ethical decision-making in artificial intelligence, and the dialectical relationships between time and technology in a liquid modern era. Members of the group have recently published research blogs and articles (see below) on the complexity of time and the interplay between time and technology in organisational and societal contexts.

**Publications**


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Running to go backwards: The problem with productivity apps. Irish Time article written by Prof Kieran Conboy.

LUISS GUIDO CARLI UNIVERSITY – Centre for Research in Leadership, Innovation, and Organisation (CLIO)

ABOUT THE INSTITUTION
Founded in 1966 Luiss is a private Italian University specialised in the social sciences and strongly committed to conducting academic research and educate talented individuals. Luiss faculty is actively engaged in both theoretical and applied research in a variety of areas of business and management including information system (IS). Since 1998, Luiss researchers have achieved international standing in IS education – including teaching and research – initially through the Research Centre on Information Systems (CeRIS) and since 2016 through the Centre for Research in Leadership, Innovation, and Organisation (CLIO). The Luiss IS group represents Italy in the ERCIS network and has contributed to the birth and to the growth of the AIS (www.itais.org), the Italian Chapter of the AIS (www.asinet.org). ITAIS plays an important role in the promotion and coordination of the Italian IS academic and scientific community.

Teaching and research activities in the IS field at Luiss are conducted at intersections of Technology, Innovation and Organizing, supported by CLIO members who have published in international top journals including IT, IS/JS, I&M, CAIS, JKM, and Management Decision.

RESEARCH TOPICS
Research on IS at Luiss is done in conjunction with project activities in which members of the IS group participate in the iterative phases of designing and evaluating sociotechnical interventions. A multidisciplinary team of IS and organization scholars with backgrounds in computer science, engineering, economics, management, cognitive and political sciences collaborate in both project and research activities by bringing together a multiplicity of methods for planning interventions and analysing phenomena from different perspectives. This approach allows addressing relevant problems and engaging in national and international cooperation with other universities and research institutions.

IS research at Luiss focuses on four main streams. The first is related to Dark Net and the Risk Society. The second is related to Digital Innovation. The third is related to Digital Workforce Transformation. The fourth relates to crowdsourced phenomena that can be utilized by public and private organizations like crowdsourcing, crowdfunding and citizen science.

CURRENT RESEARCH PROJECTS
In November 2019 a new project on cyber security has been started. The Cyber 4.0 is a three-year project funded by the Italian Ministry for Economic Development and aimed at increasing cybersecurity awareness and capabilities in the industrial sector with a special focus on SMEs. The Cyber 4.0 is a public-private partnership involving about 40 partners, including Universities, manufacturers, service providers and companies operating in the defence sector. The CLIO team will contribute to the project by implementing the capabilities of technical Universities with research and teaching activities on the managerial, economic, legal and political aspects of cybersecurity.

In June 2019 the EU Erasmus+ project MASTIS (Establishing Modern Master-level Studies in Information Systems) has been successfully completed. The project has involved ERCIS members who supported Universities in Ukraine and Montenegro in strengthening their programs and teaching practices. The CLIO team has contributed by sharing teaching practices on computational thinking, design thinking and gamification in the area of digital innovation.

Additional IS projects led by CLIO members are related to Dark Nets, IS security management, digital workforce transformation, IT in citizen science, IT in the fruition of cultural goods. Recently the Luiss IS group opened a Chair on Business Transformation and Data Driven Innovation sponsored byCisco and a postdoc position on Dark Net Markets.

PUBLICATIONS

Luiss Guido Carli University – Centre for Research in Leadership, Innovation, and Organisation (CLIO) http://clio.luiss.it

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Francesco Cappa has been awarded with the “Best paper on Crowdfunding” at the Third Entrepreneurial Finance Conference held at Polytechnic University of Milan (26–27 June 2018) and sponsored by Gruppo Bertoldi and Wallance companies, with the paper “The impact of narrative style and entrepreneur’s experience in crowdfunding campaigns”.

EVENTS
- CISCO Digital Advisory Board (DAB), Rome, October 16th, 2019
- World Open Innovation Conference 2019, Rome, 12th–13th 2019
The Institute of Information Systems at the University of Liechtenstein

The funding to the University of Liechtenstein – Institute of Information Systems – Hilti Chair of Business Process Management

CURRENT RESEARCH PROJECTS

Digital capital creation
Digital capital describes infrastructural (networks etc.) and institutional (regulations etc.) factors that enable digitization on an individual, organizational, political and societal level. It forms the basis for the generation of other forms of capital, such as economic capital or human capital, which is the primary goal of all organizations. Well-known forms of digital capital range from digital procurement processes to the Sharing Economy. As part of a research project, the Institute of Information Systems examines the role of digital technologies in the generation of various forms of capital. The aim of the project is to develop a Liechtenstein model for the generation and use of digital capital.

Detection of Malicious Cryptomining in Network Metadata
Cryptocurrencies and the underlying blockchain technologies have become one of the most intriguing developments in information technology in the last decade and also attract criminals. By using mining software on users’ computers or in their browsers, thieves can earn up to several tens of thousands of dollars a month by illegally extracting cryptocurrencies. In this research study a novel method was developed, with which both browser-based and malware-based mining can be detected by network traffic analysis. The peculiarity of the new method is the use of network metadata as a basis for the detection of illegal mining. The new approach facilitates an accurate detection of illegal mining and fulfills privacy requirements by eliminating the analysis of plain text network data. In contrast to previous techniques for detecting cryptomining, this approach is much more practical from an operational point of view. It does not require the installation of special monitoring software on end devices and makes it significantly more difficult to disguise cryptomining as harmless network traffic.

AWARDS

2019 Editor’s Choice
The publication “Design principles for sensemaking support systems in environmental sustainability transformations” by Prof. Dr. Stefan Seidel, Dr. Leona Chandra Kruse, Dr. Nadine Székely, Michael Gau (all from University of Liechtenstein) and Daniel Stieger was awarded “2019 Editor’s Choice” by the European Journal of Information Systems (EJIS).

Liechtenstein Award for Young Researchers
Dr. Leona Chandra Kruse, Assistant Professor at the Institute of Information Systems, was awarded the Liechtenstein-Award for Young Researchers for her dissertation on “Designing and Making Use of Design Principles”.

Associate Editor at Management Information Systems Quarterly (MISQ)
Prof. Dr. Stefan Seidel was appointed Associate Editor at Management Information Systems Quarterly (MISQ). MISQ is the world’s most respected and important journal for information systems.

Strongest research location in German-speaking countries

The Association for Information Systems (AIS) ranked universities worldwide in the area of information systems by counting the number of publications in the leading eight journals of the discipline. In this ranking, the University of Liechtenstein has achieved rank 26 worldwide, rank 4 in Europe and rank 1 in the German-speaking world for the last two years. Prof. Dr. Jan vom Brocke ranks 16th in this ranking worldwide and together with Prof. Dr. Alexander Benlian of the TU Darmstadt, he ranks first among all German-speaking information systems researchers worldwide.

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PUBLICATIONS


Complete list of publications: https://www.uni.li/en/university/institutes/information-systems-research-1/allpublications

DISSERTATIONS

Mathias Trebs: “Designing Digital Choice Sets: How Does the Presentation of Options Influence Users’ Decision Making?”


Complete list of publications: https://www.uni.li/en/university/institutes/information-systems-research-1/allpublications

DISSERTATIONS

Mathias Trebs: “Designing Digital Choice Sets: How Does the Presentation of Options Influence Users’ Decision Making?”


Complete list of publications: https://www.uni.li/en/university/institutes/information-systems-research-1/allpublications

DISSERTATIONS

Mathias Trebs: “Designing Digital Choice Sets: How Does the Presentation of Options Influence Users’ Decision Making?”


KAUNAS UNIVERSITY OF TECHNOLOGY – DEPARTMENT OF INFORMATION SYSTEMS / CENTRE OF INFORMATION SYSTEMS DESIGN TECHNOLOGIES

ABOUT THE INSTITUTION
The Department of Information Systems at the Kaunas University of Technology (KTU) was founded in 1993 as a result of more than 20 years of research in the field of information systems (IS). Since then, we have grown to become one of the leading departments in the KTU Faculty of Informatics. In 2012, the Department’s Laboratory of Information Systems and Databases Design was restructured into the Centre of Information Systems Design Technologies (headed since by prof. R. Butleris). In 2014, the Center has been expanded as part of the move to the newly established Integrated Science, Studies and Business Centre (Valley) “Santaka”. As of autumn 2019, the Department and Centre combined employed 27 researchers and teachers. Over the years, we established good relationships with the local IT companies and accumulated valuable research experience with Lithuanian and international partners.

Our academic work is about providing quality education on fundamental and advanced subjects in the field of information systems. The Department has developed first and second cycle study programmes titled “Information Systems” and “Information Systems Engineering”. At the start of the 2019–2020 study year, 124 students were studying in the Bachelor study programme, and 20 – in the Master’s. There were also 10 PhD students at the Department.

RESEARCH TOPICS
The KTU Department of Information Systems / Centre of IS Design Technologies specialises in areas related to Information Systems and Software Engineering, namely:

- Model driven development, model-to-model transformations
- Computer aided software engineering (CASE) technologies
- Conceptual modeling and databases
- Modeling of business processes, business vocabularies, and business rules
- User needs analysis and requirements modeling
- Ontologies and solutions for the Semantic Web
- Machine learning
- Big data and business intelligence
- Knowledge based systems


Establishing Modern Master-level Studies in Information Systems – MASTIS (2016–2019). Funded by the Erasmus+ Program. The project has been successfully completed this summer, resulting in the new second cycle study program in IS implemented in 7 Ukrainian and 2 Montenegrin universities. The efforts were coordinated by the University Lyon 2 (France) and Simon Kunzets Kharkiv National University of Economics (Ukraine, member of ERCIS) and involved 7 other EU universities, 6 of them – ERCIS members.


EVENTS
The 25th International Conference on Information and Software Technologies took place on October 10–12, 2019, in Vilnius, Lithuania. ICIST is organized annually by the Faculty of Informatics of Kaunas University of Technology and is chaired by the professor Audrius Lapota of the Department of Information Systems.

PUBLICATIONS


Singh. Digital Business is presently taught by Professor Gohar Khan, Karyn Rastrick, and Shivindu Singh. The school has approximately 40 academic staff in the Digital Business discipline: Stuart Dillon, Eric Deakins, William Wang, and others. Stuart Dillon is the head of the Digital Business. Associate Professor of Marketing (SoMM) which incorporates the School of Accounting, Finance and Economics (SAFE) and the School of Management and Marketing (WMS) is one of four divisions in the University of Waikato – Department of Management Systems. WMS was reaccredited by AMBA in 2017, and EQUIS in 2018.

**Current Research Projects**
A number of research projects are currently underway, primarily around the business application of emerging technologies and social media analytics. One such project is seeking to understand the perceived consumer value of retailers social media brand presence. Facilitated by the retailers own social media platform, consumers were surveyed to assess the impact of retailer social media activity on purchase intentions.

**About the Institution**
The Waikato Management School (WMS) is accredited by AACSB International, EQUIS – the European Quality Improvement System, and AMBA – the UK-based Association of MBAs. AACSB is the US-based Association to Advance Collegiate Schools of Business and is the world’s oldest-established quality assurance body in management education. These accreditations are reviewed every few years by a team of academics from business schools around the world to ensure Waikato Management School staff continue to offer high quality and relevant teaching and that our top research rankings, programming and planning are maintained to international standard. WMS was reaccredited by AMBA in 2017, and EQUIS in 2018. WMS is one of four divisions in the University of Waikato – Department of Management Systems. WMS is the world’s oldest-established quality assurance body in management education. These accreditations are reviewed every few years by a team of academics from business schools around the world to ensure Waikato Management School staff continue to offer high quality and relevant teaching and that our top research rankings, programming and planning are maintained to international standard. WMS was reaccredited by AMBA in 2017, and EQUIS in 2018.

**Research Topics**
Our research reflects the multidisciplinary nature of the academics within the digital business discipline. Recent relevant research projects focus on:
- Social Media Analytics
- Big Data Analysis
- Cyber Security
- Online Shopping
- Applied Data Science
- Digitisation

**Hosted Seminars**
The school regularly hosts seminars by visiting speakers which span a range of topics, reflecting the multidisciplinary research interests of the school. In 2019, as part of a visit by Prof. Gottfried Vossen of ERCIS headquarters, PhD student Denis Martins gave an interesting talk titled “Enabling non-technical users to query and purchase data.”

Christian Rivet, Associate Professor of Marketing at Grenoble École de Management (GEM), delivered an interesting seminar on Bizlab: The Story of Grenoble School of Management’s Digital Business Research, Teaching and Training Environment. Finally, Adjunct Professor, Martin Wetzels from Maastricht University, delivered a seminar titled: Changing the Marketing Narrative: A Story of Digital Disruption.

**Publications**


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The Department of Information Systems (IS) is one of four departments within the Faculty of Social Sciences at the University of Agder (UiA). With an academic staff of 20 permanent positions and 2 adjunct professors, this is one of the largest IS departments in Norway.

The department offers a three-year bachelor programme in IT and Information Systems, a one-year undergraduate study in IT and Information Systems, a two-year master programme in Information Systems, and a three-year PhD programme in Information Systems. The master programme started in 1999 as the first IS master programme in Norway. University of Agder also has a Department of ICT, responsible for education and research within computer science and ICT engineering. In 2019, the two departments started a new, joint master programme in cybersecurity.

The Department of Information Systems contributes actively to the IS community by publishing in leading IS journals, and hosting and participating in international conferences.

Research in the Department of IS is mainly organised in three interdisciplinary centres:

Centre for Digital Transformation (CeDiT) conducts advanced social science research on how digitalization transforms societies and institutions. CeDiT applies an institutional approach to address transformation processes following digital innovation and change, based on a multidisciplinary approach with active engagement of multiple stakeholders. The centre includes researchers from the faculty of Social Sciences, including academics within areas such as organizational studies, political science, sociology, developmental studies, and information systems.

Centre for eHealth focuses on teaching, research, development and testing of new technology for the health and social sector. Taking a user perspective, the aim of the centre is to make everyday life easier in today’s health society by developing technological solutions such as smart house solutions and mobile home services.

Centre for Integrated Emergency Management (CIEM) focuses on how the potential of evolving communication and information technologies can be fully deployed for significantly improving emergency preparedness and management. In collaboration with emergency stakeholders, the centre conducts research on community resilience, situational awareness, human-centred sensing, social media, decision support, cybersecurity, and critical infrastructures.

Research in the Department of IS is led by the Centre for Integrated Emergency Management at UiA, with the Norwegian University of Science and Technology, Linkoping University, and University of Sydney as academic partners. The consortium also includes two IT companies and the County Governor of Agder. INSiTU will develop knowledge and solutions for effective information sharing among emergency responders in complex operations requiring collaboration between several agencies.

Events

The Centre for Integrated Emergency Management together with the European Working Group on Humanitarian Logistics organized the fourth EURO HOpe conference on September 5–6, 2019. The conference theme was Enabling Technologies in Humanitarian Supply Chains.

Publications


ABOUT THE INSTITUTION
With more than 23,000 students, 11 faculties, and about 1,700 academic staff members, the University of Gdansk is the largest institution of higher education in the Pomeranian region, Poland. It offers the opportunity to study in 87 different fields of studies with 27 specializations.

The Department of Business Informatics (BI) of the University of Gdansk is involved in research and teaching in the field of Business Informatics at the Bachelor, Master, and Doctoral levels. The Department is the main contributor to the E-learning Educational Platform of the University of Gdansk.

The Department of Business Informatics of the University of Gdansk is conducting intensive teaching and research activities. Some of its academic manuals are bestsellers in Poland. The Department is also active internationally, organizing conferences including the 10th European Conference on Information Systems (ECIS) 2002, the 7th International Conference on Perspectives in Business Informatics Research (BIR 2008), the 8th International Conference on European Distance and E-learning Network (EDEN 2009), and the series of SIGSAND/PLAIS EuroSymposia. The Department is the partner of the European Research Center for Information Systems (ERCIS) consortium from 2004.

Polish Chapter of Association for Information Systems – PLAIS was awarded four times by AIS as the outstanding chapter – in 2014, 2016, 2017, and 2018. The Department of Business Informatics established a Polish Chapter of AIS – PLAIS that was established in 2006 as the joint initiative of Prof. Claudia Loebbecke, University of Cologne, Germany, former President of AIS, and Prof. Stanisław Wrycza, University of Gdansk, Poland. PLAIS co-organizes international and domestic conferences on systems analysis and design as well as on Business Informatics and Systems Engineering.

RESEARCH TOPICS
The areas of research interest at Department of Business Informatics cover the following theme:
- Information Systems Development
- ICT Global Development
- IT Acceptance Research
- UML and SysML

CURRENT RESEARCH PROJECTS
Development and launching of the specialisation of Bachelor and Master Studies at Faculty of Management of University of Gdansk – Business Informatics: Informatic Applications in Business (AIB);

World IT project, coordinated by University of North Carolina – in cooperation with teams from different universities worldwide. The survey on IT in Polish enterprises in respect of IT occupational culture (ITOC) has been conducted with funding grant of energy producer Energa. The results are going to be published in numerous research papers.

EVENTS
The 12th SIGSAND/PLAIS EuroSymposium 2019 (Gdansk, Poland, September 19, 2019).

PUBLICATIONS
A book entitled Business Informatics. Theory and applications., edited by S. Wrycza and J. Maślankowski, was published in May 2019. The book, with 865 printed pages, was written by Polish and foreign academics and practitioners, including 11 academic employees from Department of Business Informatics at University of Gdansk. The first chapter, entitled Pro-paedetics of Business Informatics, was co-written by Prof. Joerg Becker, Academic Director of the ERCIS.

Bibliographical data in original language (Polish):


The Department of Information Systems (DIS), chaired by Professor Ngoc Thanh Nguyen, as part of the Faculty of Computer Science and Management currently consists of 25 computer science scientists and 10 Ph.D. students. We regularly organize international scientific conferences; Asian Conference on Intelligent Information and Database Systems (ACIIDS), International Conference on Computational Collective Intelligence (ICCCI), and International Conference on Multimedia and Network Information Systems (MISIS). We also teach students of the Faculty of Computer Science and Management at two levels of education: three-and-half-year bachelor’s degree and one-and-half-year master’s degree. Our Department offers two specializations for full-time study: database and data mining in the field of Computer Science. We supervise PhD candidates conducting research in areas linked to our work.

RESERCH TOPICS
Our main objective is to carry out basic and applied research in the field of Information Systems (IS). The major issues, perspectives, and challenges are as follows:

- Computational Collective Intelligence understood as an AI sub-field dealing with soft computing methods that enable making group decisions or processing knowledge among autonomous units acting in distributed environments. Web-based systems, social networks, and multi-agent systems very often need such tools for working out consistent knowledge states, resolving conflicts and making decisions.

- Knowledge Management Systems referred to any kind of IS that store and retrieve knowledge, improve collaboration, locate knowledge sources, mine repositories for hidden knowledge, capture and use ubiquitous knowledge.

- Agents and Multi-Agent Systems related to the modern software for constructing autonomous, complex and intelligent systems including the specification of agent communication languages and formalization of ontologies. Agent communication languages provide standard declarative mechanisms for agents to communicate knowledge, whereas ontologies are meant for conceptualization of the knowledge domain. In this context, the problem of semantic mismatch arises and special conflict resolution strategies based on computer-supported negotiations are necessary.

- Recommendation and Personalization in Web Systems applied in a great variety of domains, such as net-news filtering, web recommender, personalized newspaper, sharing news, video recommender, e-commerce, travel recommender, e-mail filtering, music recommender, user interface recommendation, negotiation systems, etc.

- Ensemble and Hybrid Models that combined linear and non-linear features of existing models of Computational Intelligence. To the methods of ensemble learning, we classify bagging, boosting, stacking, subsampling, random subspaces, mixture of experts, and others.

- Semantic Information Retrieval ranged from link structure analysis to using social network relationship semantics. We use and research paradigms and technologies like Semantic Web, linked data, Web ontologies, and Web data aggregation.

- Multimedia Information Processing covering the following aspects: audio signal processing, image recognition and video clustering, loss and lossless compression.

- System Performance Analysis with content caching techniques, usability testing, content indexing algorithms, and web-based optimization techniques.

- E-Learning Methodologies focused on applications of online collaboration paradigms, like wiki and video conferencing, Learning Management Systems and Learning Content Management Systems, digital documentation techniques, like screenshot and annotated (snatched) screenshot slides, and examining based on real-time quizzes.

Dr. Dariusz Król, PhD, DSc was promoted to the position of professor of WUST by the Rector of the Wrocław University of Science and Technology.

PUBLICATIONS


DISSERTATIONS/HABILITATIONS
Krystian Wojtkiewicz defended his Ph.D. thesis entitled “Unified Process Metamodel” at the Faculty of Electrical Engineering, Automatics and Computer Science of the Opole University of Technology.
About the Institution

The Department of Information Systems is located in the Campus of Azurém of the University of Minho, in the city of Guimarães, the cradle city of Portugal. The department was established in the late 1990s, after a graduation program in Information Systems was created. The Department of Information Systems currently offers an integrated master (5 years degree program) in Engineering and Management of Information Systems currently of the University of Minho, in the city of Guimarães.

The Department of Information Systems promotes academic work that focuses on themes at the intersection of Information Technologies, Information, and Human and Social endeavours. Particular importance is given to design activities addressing phenomena that embrace that intersection aiming at solving enterprise problems or at seizing opportunities where Information technology plays a central role. Research activities combine engineering and technology research methods, together with the ones used in the organizational studies, management, economics and social sciences.

The research performed by the Department's faculty is consolidated in the IST (Information Systems and Technologies) research group of ALGORITMI. This stream includes three main research groups:

- Intelligent Data Systems group that deals with technologies, tools, models, and techniques related to Data Mining and Data Warehousing Systems. The main objective is the research in knowledge areas such as Adaptive Business Intelligence, Intelligent Decision Support Systems, Data Mining, Intelligent Data Analysis, Data Warehouse, and OLAP.
- Information Systems and Technology for the Transformation of Organizations and Society group. The researchers in this group adopt interdisciplinary approaches and research methods originated in the social sciences and engineering. These approaches are used to study the SS/IT adoption and use in organizations and society, and to develop new tools to solve identified problems or knowledge gaps.
- Software Engineering and Management group is devoted to develop state-of-the-art of software-based information systems. This group focuses on both the engineering and management dimensions of the following research topics: (i) analysis and design of information systems; (ii) business and location-enhanced database systems; (iii) metadata and ontologies for business and location-enhanced database systems; and (iv) process and project management life-cycles.

Current Research Projects

In 2019, the IST research was funded by new projects totaling the amount of about 2.110.226,04 €, including the projects:

- DeFl – Deus ex Machina – Symbolic Technology for Societal Efficiency Gains
- POESIC – Painel para a Obsevação Estratégica da Sociedade da Informação e do Conhecimento (Panel for the Strategic Observation of the Information and Knowledge Society)
- PROMOS – Prediction and Optimization of Advertising Campaigns for Mobile Devices
- EMPORER SSE: A Semantic and Linked Data Based Framework for Empowerment of the Social and Solidarity Economy
- VVSESM – 6.849,32 Journal Articles Everyday: Visualize or Perish!
- eCIVITAS – Expansão inter-regional da Rede Casas do Conhecimento (inter-regional expansion of the knowledge houses network).
- Test System Intelligent Machines

Publications


Dissertations/Habitations


Since 2013, HSE has been a member of the 5-100 Russian Academic Excellence Project, a highly selective government programme aimed at boosting the international competitiveness of Russian universities. (https://www.hse.ru/en/)


Founded in 2002, HSE School of Business Informatics was created with the active participation of leading Russian and multinational companies and is a pioneer in the new educational discipline of Business Informatics, which combines information technology (IT), informatics and management concepts. The school aims to attract talented and motivated young people to form Russia’s future entrepreneurial and administrative elite professionals in business informatics. (https://bi.hse.ru/en/about/)

RESEARCH TOPICS
- Business value of Enterprise IS
- Industry 4.0
- PLM and production processes
- IoT and IoS
- Big Data Analytics
- Big Data BPM
- 5-BPM
- IT outsourcing
- Semantic Technologies

CURRENT RESEARCH PROJECTS
Grants of the Russian Foundation for Basic Research, devoted to
- the study on the evolutionary Dynamics of Social Networks based on conditional simulation-tested resource environment;
- traveling and quasi-traveling waves in complex dynamical systems;
- theoretical development and simulation of methods of trajectory control over groups of dynamical objects on the basis of hydrodynamics theory and a concept of inverse dynamics problems;
- research and development of mathematical models, methods and algorithms of visualization and graph analysis by the example of social networks;

Bilateral funding program “Helmholtz-Russian Science Foundation Joint Research Groups”: “Blockchain: Assessing Suitability of Distributed Ledger Technology”

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NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS – MOSCOW

ABOUT THE INSTITUTION
Consistently ranked as one of Russia’s top universities, the Higher School of Economics is a leader in Russian education and one of the preeminent economics and social sciences universities in eastern Europe and Eurasia. Having rapidly grown into a well-renowned research university over two decades, HSE sets itself apart with its talent, researchers, and students.

Now a dynamic university with four campuses, HSE is a leader in combining Russian education traditions with the best international teaching and research practices. HSE offers outstanding educational programmes from secondary school to doctoral studies, with top departments and research centres in a number of international fields.

AWARDS
Graduates from the school of Business Informatics won the ITSM competition in Russia;


EVENTS
IEEE CBI-2019 (www.cbi2019.moscow) was hosted at HSE in Moscow, Russia, 15–17th of July 2019;

ERCIS 15th Anniversary meeting, May, 2019;

School of Business and Economics, University of Munster, 50th Anniversary, May, 2019;

First graduation of Executive master of management in Industry 4.0 programme;

International Workshop on the Internet of Things and Smart Services (ITSS2019), Moscow, Russia, 15–17th of July 2019;

Russian-French Workshop on Big Data and Applications, Toulon, France, March 2018;

Annual Workshop on Big Data Application organized by the AIS Special Interest Group (SIG) on Big Data Analytics, Munich, Germany, 4th of December, 2019.

SELECTED PUBLICATIONS


Dissertations/Habitations
E. German “Investment Mechanism Analysis of the Republic of Moldova: Formation and Development”.

B. Bidhoyan “Assessing and forecasting the reliability of Russian commercial banks considering the volatility of macroeconomic variables”.

Habilitations: Y. Koucheryavi “Development and research of a complex of models and methods of resource allocation in wireless heterogeneous communication networks”.

More information about the institution can be found at https://www.hse.ru/en/about/
Higher School of Economics – Nizhny Novgorod

The research of the Faculty IMCS focuses on the following directions:

- Cognitive science – the development of methods and techniques of receiving, processing, storage, use and management of professional knowledge.
- Situational Modeling – multidimensional modeling of the behaviour and decision making processes of individual and collective agents in complex distributed systems.
- Original ways of formalizing the knowledge, which are based on ontological engineering, are supplemented by practical methods of integration and verification of complex corporate service oriented systems.

New mathematical models and multiaction optimization algorithms in distributed service-oriented systems applicable to different domains (transport, planning, training activities); the result defines new approaches to the creation and use of intelligent decision support systems in the modern service-oriented economy.

Axiomatic approach to non-compensatory aggregation (decision making rules) and axiomatic approach to general measure of power (power indices) in a voting body.

Digitalization of museums and artistic heritage objects: case of Alexander Pushkin house-museum “Boldino”.

Professor Panos Pardalos, Research Director of the Laboratory of Algorithms and Technologies for Analysis of Network Structures, was awarded a Humboldt Foundation Prize.

- Workshop “Organizations Engineering Days”, September 06–10, 2019
- Members of Program Committees of the following conferences: BIR-2019, E. Babkin (PC Member) EOMAS-2019, E. Babkin, P. Malyzhenkov (Co-chairs) EEWE-2019 E. Babkin (PC Member)
- Eduard Babkin has been invited as a keynote speaker (speech topic “Digitalization: A Meeting Point of Knowledge Management and Enterprise Engineering”) to the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, Vienna, Austria, 17–19 September 2019.
- Pavel Malyzhenkov has become the Chair of the 1st Master and Doctoral Consortium held in the frame of EOMAS workshop (“Sapienza” University, Rome, 3–4 June, 2019).

SELECTED PUBLICATIONS


- Pavel Malyzhenkov has been invited as a keynote speaker (speech topic “Digitalization: A Meeting Point of Knowledge Management and Enterprise Engineering”) to the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, Vienna, Austria, 17–19 September 2019.

- Pavel Malyzhenkov has become the Chair of the 1st Master and Doctoral Consortium held in the frame of EOMAS workshop (“Sapienza” University, Rome, 3–4 June, 2019).

SELECTED PUBLICATIONS


universities around the world and strive for strong involvement of business and government. The Slovenian founding member of the European Network of Living Labs (ENoLL) is the Slovenian faculty of organizational sciences at the University of Maribor, with a strong involvement of business and governmental and educational institutions. The research area of the faculty covers complex dynamic management systems, covering various aspects from human resources, information systems, business processes, and general management. Research is organized in research projects, prototyping, consulting, education, and training at the national and international level. Their activities have been organized and are run following the LivingLab approach, with a strong involvement of business and governmental and educational institutions. The research area of the faculty covers complex dynamic management systems, covering various aspects from human resources, information systems, business processes, and general management. The main focus is hereby set on digital transformation of organizations and society. In particular, the faculty investigates the implementation of the newest ICT and societal transformation roundabout, with a multi-attribute modelling approach to evaluate the efficient implementation of ICT in schools and hospitals. Central European Journal of Operations Research, ISSN 1435-246X, Sep. 2019, vol. 27, iss. 3, pp. 759–781.

QUALITY AND ASSET MANAGEMENT


Selected publications


Dissertations in progress

Industrial and Management Engineering is an academic discipline that involves the study of the design, development, and the management of integrated systems of people, material, equipment, and information in a variety of sectors. Therefore, Industrial and Management Engineering provides excellent opportunities to create new values and innovations in today’s dynamic global environment.

We are pursuing an understanding of engineering technology and management of future and smart city technologies, including retrofitting existing infrastructures with the latest technological advancements for the efficient establishment and proliferation of a smart city. OIBC focuses on developing platform technologies from big data gathered from the implementation of FOIC-led initiatives. Both centers are based on a foundation of open cooperation: the Open Innovation Centers aim to create socioeconomic value by attracting companies and startups to foster their growth through collaboration with the University’s advanced research infrastructures.

CURRENT RESEARCH PROJECTS

- Blockchain platform with business models towards cross-domain interoperability (Ministry of Science and ICT, Jun. 2018 – Dec. 2021). The objective of the project is developing a blockchain platform that supports cross-domain interoperability. The platform will be applied in three industries such as healthcare, insurance, and automotive.


- Mining of technology functions for customer-driven product development (National Research Foundation of Korea, Jun. 2016 – May 2019)


AWARDS

Minsu Cho, Ph.D, won the research paper award at the Korean Institute of Industrial Engineers, 2018.
The Chair of Prof. Jung investigates IT-enabled service and business innovation with a focus on health IS and wearable technology. It also covers business engineering and the use of data-driven services by individuals.

The Chair of Prof. Leimeister works on designing, implementing, and managing IT-enabled means of organization and innovation. Research activities focus particularly on crowdsourcing, service engineering and management, digital business, and learning.

The Chair of Prof. Winter focuses on analysis and method design for enterprise-wide integration, coordination, and transformation problems. Major projects in this field deploy simulation, experiments, and action design research.

About the Institution
For 30 years, the Institute of Information Management at the University of St. Gallen (IWI-HSG) has been dedicated to applied and design-oriented research at the interface between business and IT. Founded in 1989, the institute pursues a mixed funding approach from both public and private sources. Privately funded research at IWI-HSG is usually organized in the form of research consortia (“competence centers”). These centers, each of which includes between four and eighteen corporate partners, fall under the responsibilities of different chaired professors. In addition to its research activities, IWI-HSG lectures engage in executive education, offering degree and non-degree programs in areas such as Business Engineering and IT Business Management. Being one of the largest research units at a top business school, the IWI-HSG’s contributions focus on business innovation, including methods, reference models, and innovative prototypes.

As of fall 2019, Prof. Andrea Back, Prof. Walter Brenner, Prof. Reinhard Jung, Prof. Jan Marco Leimeister, and Prof. Robert Winter are heading five research groups comprising twelve assistant professors or postdocs, twenty-six research assistants, eleven research affiliates, fifteen student assistants and twelve support staff members.

Selected Research Topics
The Chair of Prof. Back focuses on innovative applications of new technologies covering topics such as agile innovation, cybersecurity, digital maturity and transformation, digital strategy and transformation, new work and learning, smart IoT and mobile business as well as sports digitalization.

The Chair of Prof. Brenner focuses on information management, industrial services and enterprise systems, and digital consumer business (e.g., consumer and big data analytics). Another focal field of interest is design thinking.

The Chair of Prof. Jung investigates IT-enabled service and business innovation with a focus on health IS and wearable technology. It also covers business engineering and the use of data-driven services by individuals.

The Chair of Prof. Leimeister works on designing, implementing, and managing IT-enabled means of organization and innovation. Research activities focus particularly on crowdsourcing, service engineering and management, digital business, and learning.

The Chair of Prof. Winter focuses on analysis and method design for enterprise-wide integration, coordination, and transformation problems. Major projects in this field deploy simulation, experiments, and action design research.

Selected Research Projects
A list of competence centers and current projects can be found at: http://www.iwi.unisg.ch/?d=1202

Digital Strategy and Transformation: The CC Digital Strategy and Transformation is developing management instruments and tools for strategy work in the digital age.

The Digital Transformation Maturity Model for the Fuzzy Front End stage of digital transformation has been adopted and adapted widely in practice. Recently, concepts and methods for managing established firms’ collaboration with the startup ecosystem have been published and are being used. The next focus area for relevant research is intrapreneurship methods.

Further information:
https://aback.iwi.unisg.ch/kompetenzen/digital-strategy-transformation/
https://aback.iwi.unisg.ch/kompetenzen/agile-innovation/

Crowdsourcing: The research goals of CC Crowdsourcing include the development of models and instruments for systematic design, introduction as well as usage of crowdsourcing approaches for digital work and IT-based innovations.

Further information:
http://crowdsourcing.iwi.unisg.ch

Design Thinking: The Design Thinking Group is focused on embedding human-centric innovation tools into corporate structures. The research team strives to improve the capability of corporate IT and to reduce costs and risks in innovation projects.

Further information:
http://dthsg.com/

Digital Service Innovation: Research conducted in the context of the CC Digital Service Innovation revolves around service and business innovation. It also seeks to understand the acceptance and usage of digital services by individuals and enhance their user experience through digital nudging.

Further information:
https://dsi.iwi.unisg.ch

Ambidextrous Digital Platforms: With the aim of developing both descriptive and prescriptive theories and drawing on both organizational ambidexterity and complex adaptive systems as theoretical lenses, this project is expected to provide a thorough description of the dynamics, determinants, and design configurations through which platform owners simultaneously manage and legitimate a balanced co-existence of top-down control and bottom-up emergence.

Further information:
https://www.research.unisg.ch/id/project/24758

Industrial Service and Enterprise Systems: The CC Industrial Service and Enterprise Systems is engaged in studying the interplay between industrial services and corporate information systems. The goal of the CC is the development of scalable and flexible processes, systems, and data management approaches in the industrial context. Further information:
https://www.alexandria.unisg.ch/id/project/243205

Data Management and Analytics Community (DMAC): The DMAC focuses on an enterprise-wide perspective on data in large European banks. The community on the one hand is concerned with challenges in data analytics for business innovation while on the other hand taking care of data management challenges implied for example by legal regulations such as the General Data Protection Regulation (GDPR).

Further information:
https://www.alexandria.unisg.ch/id/project/253946

Publishations
The following list is a limited extract of the IWI-HSG publication list in 2019. A complete list of publications with full texts of many papers are available at: http://www.iwi.unisg.ch/publikationen


Winkler, T. & Wolf, J. (2019). Effectiveness of IT Service Management Capability: Value Co-Creation and Value Facilitation Mecha-

Further information:
http://www.iwi.unisg.ch

Jan Marco Leimeister
Professor of Information Management
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Creating intelligent Manufacturing Systems
Smart innovations in manufacturing are key to securing the welfare and wellbeing of society. Smart industry is the way forward for industry. Using Smart Industry means personalized and smart products, optimizing human-machine interaction, yielding faster, cheaper, and more sustainable production. It means adapting business models to changing industries and services. And thus of utmost importance to remain at the competitive edge.

Improving Healthcare with E-Health
It becomes more and more evident that the current approach to healthcare is not sustainable, especially when considering the increasing volume and demands of chronic diseases, requiring a rethinking of strategies towards innovative solutions. The use of information and communication technologies in healthcare – eHealth – is a promising strategy to improve healthcare worldwide.

Excellent is a key issue. The institute’s project Living Smart Campus forms a linking pin between all research activities, and is as such profiling for ‘Science for a Smart Society’. The Campus becomes a center of open innovation, to which also industry, government bodies and citizens are committed. Various departments are joining efforts in these centers to address research challenges in an interdisciplinary way. More information on the centers can be found at https://www.utwente.nl/en/digital-society/

CURRENT RESEARCH PROJECTS
DSI is active in dozens of research projects financed at the national and European level and directly by industry. Departments directly related to ERGIS research themes are the IEBIS (Industrial Engineering and Business Information Systems) group and the SCS (Services, Cybersecurity and Safety research group).

The IEBIS group is concerned with studying novel ways of managing business processes and supply chains using innovative techniques such as simulation, (social) data mining, multi-agent coordination and gamification. Researchers in IEBIS use design science methods to develop Decision Support Systems and Inter-Organizational Systems connecting networks of businesses and governments.

The goal of the SCS group is to develop methods and techniques for developing IT-based services that balance service levels with safety- and security levels, and to develop methods and techniques that make existing IT-based services more secure.

Selected research projects include:
- Servitization Small and Medium Enterprises – Research project with 2 PhDs jointly with Fontys University of Applied Sciences
- Autonomous Logistics Miners – This new project investigates the application of AI to autonomous logistics
- Circular Performance Management – The new project studies the development of performance and recommender systems for circular products and processes across supply chains

Synchronomadoll – this project aims at designing advanced algorithms and Business-IT architectures to facilitate dynamic planning of logistics across various modalities. As part of the project, two PhD theses were completed and a educational game was developed to illustrate the synchronomadoll concept – see https://www.trucksandbarges.nl/

Sharebox – Industrial Symbiosis for sustainable Industry (EU Project) – This project has been completed in fall 2019

Awards
The N.W.O funded several projects for PhD and postdoc positions in the IEBIS department

Events
IEBIS participated in the end symposium of the European Sharebox project – August 2019

PUBLICATIONS


Dissertations
Integration and coordination in after-sales service logistics, Rahimi-Ghahroodi, S., 15 Feb 2019, Enschede: University of Twente. 209 p.

Values for Cooperative Games with Restricted Coalition Formation, Li, X., 20 Feb 2019, University of Twente. 161 p.

All publications are available at doc.utwente.nl

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IEBIS: http://www.utwente.nl/en/iebis
Head of Department: Prof. Dr. Jos van Hillelgersberg
j.vanhillegersberg@utwente.nl
SCS: http://scs.ewi.utwente.nl
Head of Department: Dr. Marten van Sinderen
DSI: https://www.utwente.nl/en/digital-society
Scientific Director: Prof. Dr. Maarten van Steen

A Simulation Game for Anticipatory Scheduling of Synchromodal Transport. In R. Hamada, S. Sornastapom, H. Kanegaee, P. Dummongrojwatthana, S. Chaisanit, P. Rizzi, & V. Dumblekar (Eds.), Neo-Simulation and Gaming Toward Active Learning (pp. 67-75).


Dissertations
Integration and coordination in after-sales service logistics, Rahimi-Ghahroodi, S., 15 Feb 2019, Enschede: University of Twente. 209 p.

Values for Cooperative Games with Restricted Coalition Formation, Li, X., 20 Feb 2019, University of Twente. 161 p.

All publications are available at doc.utwente.nl
LEIDEN UNIVERSITY – LEIDEN INSTITUTE OF ADVANCED COMPUTER SCIENCE (LIACS)

Universiteit Leiden
The Netherlands

ABOUT THE INSTITUTION
The Leiden Institute of Advanced Computer Science (LIACS) is a center of excellence for multidisciplinary research and education in computer science and artificial intelligence (AI). LIACS performs research within a number of themes. We concentrate on the study of theoretical foundations and formal methods, and focus on applications in the field of artificial intelligence and data science. We support CLAIRE in their aim to strengthen European excellence in AI research and innovation. And their aim to strengthen European excellence in AI research and innovation. And

RESEARCH TOPICS
Collaboration for Smart Industry: At LIACS we have a strong focus on providing Smart Computing for Science & Industry. This focus materializes in our longstanding cooperation with industrial partners and governments. These collaborations help us to focus on the applicability of research results and at the same time generate new directions for our research in computer science.

On the one hand, collaborative research adds significant value to the development of the economy. It enhances the innovative potential which in turn strengthens the competitive position. On the other hand, business challenges inspire our researchers to rethink the way they do research and invite them to look for new opportunities beyond their existing landscape. That way we do not only support in developing their competitive position, but also continuous research projects: a missed opportunity both for companies as well as for LIACS.

That is why we have developed the Applied Data Science Lab at LIACS. This lab is a vehicle that allows students, graduates and postdocs to work part time for different organizations on exciting projects, supervised and managed by LIACS top researchers. Unique opportunity for companies and students: Education is the means to develop expertise, analytical skills and social competences in various ways. The Applied Data Science Lab provides a unique opportunity for companies to learn about practical aspects of data science and for students to be inspired and to go beyond the ordinary.

Since the applied Data Science Labs’ prime purpose is to help clients explore their opportunities in data science whilst students gain working experience, we charge a break even rate, plus a small markup for administrative efforts and supervision.

At the moment we are working with KLM, General Electrics Aviation, Honda Research Institute Europe, ESTEC/ESA, Greenchoice, Ministry of Foreign Affairs, university finance department, Young Capital, Volvo Ocean Race, and others.

http://liacs.leidenuniv.nl

CURRENT RESEARCH PROJECTS
HORIZON 2020 Research and Innovation Staff Exchanges (RISE) project RISE_SMA “RISE Social Media Analytics”, with Universität Duisburg-Essen (ERCIS Partner), Agder University, Kristiansand (ERCIS partner), and others. The role of LIACS is to devise algorithms for complex network analysis and visualization, and support the work packages on text mining. The kickoff meeting was in April 2019 and dr. Suzan Verbeem, dr. Frank Takes and dr. Michael Emmerich participated in this event.

LIACS participates in the ERCIS competence center (see https://www.ercis.org/)

EVENTS
Researchers from LIACS (Michael Emmerich and Boni Naoups (TH Cologne), Dimo Brockhoff (Univ. France), and Robin Purshouse (U Sheffield) organized the MACODA Lorentz Workshop on Many Criteria Optimization and Decision Analysis in Leiden, which brought together data scientists and decision analysts from August 16 – August 20, 2019 in Leiden Lorentz Center.

Michael Emmerich was general chair of the Modern Machine Learning Technologies and Data Science (MoMLT) workshop in Shatsk, Ukraine, June 4 2019. The proceedings from this event, which mainly attract researchers from Eastern Europe, are published in Scopus and DBLP.

Researchers from LIACS also attended the celebration of 10 years of ERCIS in Münster, May 2019.

Researchers from LIACS, in particular Prof. Holger Hoos, are leading in initiating the CLAIRE initiative to promote research on responsible artificial intelligence in Europe. https://claire-si.org/

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Dissertations

See also: https://theses.liacs.nl/

Applied Data Science Lab: Although science and education have top priority, exploratory projects with companies, governments and NGOs generate ample opportunities in terms of societal challenges, science strategy, valorization and research collaboration. In the LIACS Applied Data Science Lab, our master’s students and graduates carry out short-term exploratory studies.

About us/competence-centers on “Social Media Analytics: Identification and Analysis of Disinformation, Propaganda, and Manipulation via Online Media”. Leiden is active in two different focus groups and leader of two workpackages.

See http://liacs.leidenuniv.nl for an overview of other activities.

DISCUSSIONS

See also: https://theses.liacs.nl/
ABOUT THE INSTITUTION

The Simon Kuznets Kharkiv National University of Economics (KhNUE) is the leading higher education institution of Eastern Ukraine, which provides a full range of educational services, carrying out multi-staged training, retaining and upgrading experts’ skills in 15 specialties, such as Economics and Entrepreneurship, Management and Administration, Information Systems and Computer Science, Publishing and Printing Business.

The Information Systems Department has 30 professors, more than 300 students on the bachelor level and more than 100 on the master level. The department is an active member of the IT Ukraine Association and the Kharkiv IT cluster. 12 professors are Microsoft certified specialists. Microsoft IT Academy works since 2009, collaboration with IBM in the frame of the IBM Academic Initiative program has been ongoing since 2012.

The Master Double Diploma Programme “Business Informatics” with University Lumiere Lyon-2, France was established in 2005. According to research of SMBG Consulting Group, the Programme is included in the top 10 Master Programmes in Business Intelligence in France in 2012–2017. The Programme graduated more than 250 students.

The Simon Kuznets Kharkiv National University of Economics has more than 7200 students (including 700 foreign students), 735 faculty members and offers training primarily structured around the new teaching architecture of the higher education. Having considerable experience in training Ukrainian students, KhNUE influences HR, the scientific, technical and economic policy of industrial enterprises and organisations in the country. The University trains highly skilled economists familiar with modern information technologies and innovative models of behaviour. The University established a flexible system of quality specialists’ preparation management, based on continuous monitoring of KhNUE graduates’ achievements.

RESEARCH TOPICS

The majority of Simon Kuznets Kharkiv National University of Economics Information Systems Department research activities are carried out within the following topics:

- Mobile technologies in operative management of an enterprise
- System of monitoring in scientific researches in higher education
- Fuzzy logic and modelling in logistic and marketing
- Information security
- Distributed data warehouses
- Knowledge base and artificial intelligence
- Innovative computer technologies in higher education

CURRENT RESEARCH PROJECTS

Horizon 2020 EQUAL-IST – Gender Equality Plans for Information Sciences and Technology Research Institutions. EQUAL-IST aims at introducing structural changes to enhance gender equality within Information Systems and Technology Research Institutions, which have been demonstrated to be among the research sectors most affected by gender inequalities at all levels.

ERASMUS+ CBHE MASTIS – Establishing Modern Master-level Studies in Information Systems. The broader objective is to improve the Master Programme in Information Systems according to the needs of the modern society; to bring the universities closer to changes in global labour market and world education sphere; to enable them to stay responsive to employers’ needs; to give students an idea of various job profiles in the Information Systems domain.

ERASMUS+ CBHE FabLab – Development of a network infrastructure for youth innovation entrepreneurship support on fablab platforms. The broader objective is to develop an environment that stimulates engineering creativity, entrepreneurial activities and fosters youth employability via HEIs-business-industry networking on fabrication laboratory platforms.

ERASMUS+ CBHE DocHub – Structuring cooperation in doctoral research, transferable skills training, and academic writing instruction in Ukraine’s regions. One of the project objectives is to establish an inter-HEI subject-specific research network in information systems that is integrated through regular seminars and co-supervision of PhD students.

ERASMUS+ CBHE CyQA – Promoting internationalization of research through establishment and operationalization of Cycle 3 Quality Assurance System in line with the European Integration Agenda. Specific project objectives are: To establish an external and internal quality assurance systems to promote quality of Cycle 3 programs and to promote the internationalization of the Cycle 3 programs with joint efforts of the key stakeholders and cross-regional cooperation.

The IS department of KhNUE will work on the establishment of a QA system for PhD programme in Information Systems.

ERASMUS+ CBHE EDUQAS – Implementation of Education Quality Assurance system via cooperation of University-Business-Government in HEIs. The broader objective of the project is to improve education quality assurance systems through the development of efficient internal quality standards leading to better employability of students in partner countries universities. The IS department of KhNUE will work on the establishment of a QA system for bachelor and master degree programs in Information Systems.


Louev M. Synthesis of information control devices which are transferred to diagnostic network with package composition. – 2019 – No. 16 (4), p. 52–63.


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PROF. IRYNA ZOLOTARYOVA
Member of the National Agency for Higher Education Quality Assurance of Ukraine, Member of the Ukrainian Higher Education Reform Experts Team, Head of Ukrainian-French Master Double Diploma Program MBA “Business Informatics” Information Systems Department

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PUBLICATIONS


Losev M. Synthesis of information control devices which are transferred to diagnostic network with package composition. – 2019 – No. 16 (4), p. 52–63.


Dr. Patrick Stacey

which two are highlighted below:

has many significant research initiatives of research topics

Olympic Park in London.

Since 2015, Loughborough University has as one of the UK's top ten universities.

has risen in stature and is today regarded ed. Since then, Loughborough University in 1966 that a university charter was grant-

close to 20,000. The origins of the institu-

the student population of the university is largest in the UK in terms of its size, and

182 km north of London. The campus is the port (13km), Loughborough University is

and through the development of the theory base of Information Systems.

Situated very close to East Midlands Air-

port (3km), Loughborough University is 182 km north of London. The campus is the largest in the UK in terms of its size, and the student population of the university is close to 20,000. The origins of the institu-

tion are in 1909 when the Loughborough Technical Institute was founded, but it was in 1966 that a university charter was grant-

ed. Since then, Loughborough University has risen in stature and is today regarded as one of the UK's top ten universities. Since 2015, Loughborough University has a second campus at the Queen Elizabeth Olympic Park in London.

RESEARCH TOPICS

The Centre for Information Management has many significant research initiatives of which two are highlighted below:

Digitization of Insurance:
The TECHNGI project investigates the op-

portunities and challenges for the UK insur-

ance industry arising from the application of the new technologies including machine learning, distributed ledger, automated processing, the explosion of available data for business analytics and modelling, so-

cial media and the connections emerging to the ‘internet of things’. This is an inter-

disciplinary project and utilizes investiga-

tors from Information Systems, Finance, Geography, Law and Engineering. Please follow TECHNGI on: https://twitter.com/techngi

Please visit: http://toxi-triage.eu/

CURRENT RESEARCH PROJECTS

Early Career Researcher Profile, Dr Kayode Odusanye

Kayode’s research focuses on technology diffusion and the organisational impact of information systems. He is also keen to conduct macro-level research that informs public policy initiatives. His work has ap-

peared in Information Systems and Eco-

nomics journals such as the International Journal of Information Management and Economics letters. Kayode is currently inves-


tivating diffusion constraints in devel-

oping countries and how they affect the uptake of different technologies.

New Recruits to TECHNGI Project

Newly recruited to the TECHNGI project is Alex Zafiris who has a PhD in Information Systems. Alex is researching how new technologies will influence the insurance sector, particularly the value chain and business models. Among the other recruits is finance specialist Joseph Watson who is exploring the role of AI and data technolo-

gies in insurance supervision and regulatory compliance, i.e. RegTech.

PhD Experience With ERCIS Doctoral Consortium

Sharon Wagg represented Loughborough at the 2019 ERCISDC, held in Puerto de Pollensa, Spain. Sharon wrote of her expe-

rience, “The format of combining a week-

long sailing course with presenting and discussing research with fellow PhD stu-

dents and academics was truly an inspir-

ing, motivational experience. Each PhD student had the opportunity to present their research for 30 minutes, without the use of slides, receive multi-perspective feedback from a supportive audience and participate in group discussion. This com-

bined with learning how to sail, getting to grips with sailing theory and nautical skills, built a great team spirit. The DC has undoubtedly been one of the highlights of my PhD journey so far.”

SELECTED PUBLICATIONS

Avgerou, C., Masiero, S. and Poulymenakou, A., 2019. Trusting e-voting amid experi-


Stich, J.E., Tarafdar, M., Stacey, P. and Coop-

er, S.C., 2019. Crossing power and knowledge boundaries in learning and knowledge sharing: The role of ESM. The Learning Or-


Giannakis, M., Spanakos, K. and Dubey, R., 2019. A cloud-based supply chain man-

agement system: effects on supply chain responsiveness. Journal of Enterprise Informa-

tion Management.

Israilidis, I., Odusanya, K. and Machar, M.U., 2019. Exploring knowledge management perspectives in smart city research: A re-

view and future research agenda. Interna-

tional Journal of Information Management.


Simeonova, B., 2018. Transactive memory systems and Web 2.0 in knowledge shar-

ing: A conceptual model based on activ-


Spanakos, K., Gurgur, Z., Mulligan, C. and Lupu, E., 2019. Organizational cloud secu-

rity and control: a proactive approach. In-

formation Technology & People.

P kt, E., Tarafdar, M., Stacey, P. and Coop-

er, S.C., 2019. E-mail load, workload stress and desired e-mail load: a cybernetic ap-


Dissertations

Dr Divyata Sohal successfully presented her thesis entitled “Systemic organisational knowledge management: An action research study in a high-performance sport institute.”

The work was supervised by Dr Gillian Ragsdell and Professor Donald Hislop. The research is based in a UK high-performance sport institute and was instrumental in fa-

cilitating knowledge management imple-

mentation aligned to the organisational strategy, embedded in core organisational processes and adaptive in response to changes in the emerging contexts.
ABOUT THE INSTITUTION

Founded in 1870, Stevens Institute of Technology is a premier private university focused on research and entrepreneurship in technology-related fields. Located across the Hudson River from Manhattan in Hoboken, New Jersey, Stevens has a population of 3,498 graduate (master’s and PhD) students and 3,431 undergraduate students. Stevens is committed to exploring the frontiers of engineering, science, and management through integrative research and education programs. Stevens’ three schools and one college support the mission of the Institute: The School of Engineering and Science, the School of Business, the School of Systems and Enterprises, as well as the College of Arts and Letters.

Stevens is regularly listed in the top 1% of US universities based on student return on investment. Notable graduates include Frederick Winslow Taylor, the father of scientific management, Henri Gantt, whose GANTT chart is a staple in most project management programs, Frederick Brooks, the creator of Gantt charts, and Alfred Fielding, the inventor of the Bubble Wrap.

The School of Business has 63 full-time faculty and 430 undergraduates, 900 MS students, 350 MBA students, 80 executive master’s students, 25 PhD students and numerous non-degree graduate, and executive programs. Within the school, the Information Systems groups is among the largest graduate programs in the US, with a mix of evening and weekend classes, as well as online course offerings to students around the globe.

RESEARCH TOPICS

Within the School of Business, two IS-related research groups operate in the areas of Business Process Innovation and Decision Technologies.

The Center for Decision Technologies (CDT), directed by Prof. Jeffrey Nickerson, performs funded research on topics related to decision making, combining perspectives from information systems, management science, organization science, cognitive science, social network analysis, and other computational sciences.

The Center focuses on bringing needed techniques to several areas. In the area of crowdsourcing and collective intelligence, it is now possible to quickly mobilize a crowd in minutes to address large-scale social problems. One example for ongoing research relates to the open source sharing of designs for use with 3D printers. Researchers at the CDT are interested in the role that crowds can play in sustainability – finding local solutions to energy needs that fulfill communities’ objectives. In the area of social networks and Big Data, research at the Center focuses on the intersection of transportation and communication networks. In many recent large-scale natural disasters, social media infrastructure has proven more resilient than traditional news outlets. At the same time, rumors propagate, and inaccurate ones impede rescue and recovery, which has led to a research interest in designing social media processes that will be useful during emergencies.

The Center received funding in excess of $4 Million during the last 4 years, from the National Science Foundation and other sources.

The Center for Business Process Innovation (CEBPI) studies the interplay between business processes and the organization. Under the direction of Prof. Michael zur Muehlen, the Center’s research activities have been organized around several key issues.

The Center’s research on Business Process Analytics is examining how to advance the family of methods and tools that can be applied to event streams in order to support decision making in organizations. Research also being conducted in the area of enterprise architecture, which contain analytical or prescriptive models of organizations, in order to efficiently identify organizational and technical interfaces, streamline cross-functional operations, and assert compliance to rules and regulations. Researchers at the CEBPI are also interested understanding the dynamics of digitalized design processes and the impact of digital technology on business process innovation.

Research at the CEBPI focuses on how organizations evolve in their ability to govern and change operational work and decision-making processes. Some organizations begin by creating technical infrastructure and the working out organizational adaptations, while others try to work out organizational details first before choosing appropriate technology. In either approach, the roles and responsibilities of a process support and management organization evolve over time, and little guidance exists as to how organizations can pursue operational efficiency in a repeatable and effective fashion.

CURRENT RESEARCH PROJECTS

Recent research at the CDT focuses on the relationship between routines and innovation in design contexts, such as those with “open source-like” characteristics, to better understand the variables and phenomena such as routine variation, sequential structuring, structural evolution, and temporal modes as well as their impacts on design outcomes such as effective coordination, digital artifact innovation, and requirements computation.

Recent research at the CEBPI aims to understand the skills, positions, and organization structures of change management professionals in industries under different regulatory intensities. Additional research projects focus on the opportunities of digital technologies such as Robotic Process Automation, Cognitive Computing, and Blockchain on the design of business processes, and the changing skills of workforce to survive in the age of smart business processes.

SELECTED PUBLICATIONS


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Dissertations/habilitations

Kim, Jinhyung: Pricing, Hedging, and Risk Assessment for Variable Annuities

Topic, Miles: The Role of Chief Information Officers in Driving Innovation within Higher Education
Apart from associated partner institutions, advisory board members, and competence centers, the ERCIS network occasionally also welcomes personal members. Those dedicated researchers are experts in their field of research and have strong personal connections within the network.

To receive a membership of a personal member, you should already have worked with partners from the network in the context of research projects, joint courses, or publications. Furthermore, you should plan or already have your career in the academic world, beyond your PhD studies. Finally, a recommendation from someone inside the network might strengthen your motivation to become a personal member.

SELECTED PUBLICATIONS


About Me:
Since January 2019, I have been an associate professor in Information Systems at the University of Agder, Norway, where I am member of the Centre for digital transformation (CeDiT). My research focuses on the adoption of e-government both by government employees and by citizens. Furthermore, I analyse how governments interact with their various stakeholders via different communication channels. In my research, which deals with e-government on a national and international level, I combine my Information Systems background with insights from other disciplines such as communication and media science. Currently, I am part of a project that compares the German and the Danish national digitalisation strategy. In addition, I am working on a study in which I analyse citizens’ channel choice for contacting governments as well as governments’ multichannel management strategies.

SELECTED PUBLICATIONS

Stefan’s work has been published in reputable journals such as Journal of Management Information Systems, Business & Information Systems Engineering, Information Systems Frontiers, and European Journal of Information Systems (EJIS).

SELECTED PUBLICATIONS

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About Me:
Since January 2019, I have been an associate professor in Information Systems at the University of Agder, Norway, where I am member of the Centre for digital transformation (CeDiT). My research focuses on the adoption of e-government both by government employees and by citizens. Furthermore, I analyse how governments interact with their various stakeholders via different communication channels. In my research, which deals with e-government on a national and international level, I combine my Information Systems background with insights from other disciplines such as communication and media science. Currently, I am part of a project that compares the German and the Danish national digitalisation strategy. In addition, I am working on a study in which I analyse citizens’ channel choice for contacting governments as well as governments’ multichannel management strategies.

SELECTED PUBLICATIONS

Stefan’s work has been published in reputable journals such as Journal of Management Information Systems, Business & Information Systems Engineering, Information Systems Frontiers, and European Journal of Information Systems (EJIS).

SELECTED PUBLICATIONS

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About Me:
Oliver Müller is Professor of Management Information Systems and Data Analytics in Paderborn University. He holds a BSc and MSc in Information Systems and Business & Management at Paderborn University. He holds a Ph.D. from the University of Münster’s School of Business and Economics. In his research, Oliver studies how organizations and individuals contribute to social and organizational artifacts and organizational systems. At the moment, my focus lies on digital innovations and business transformation affecting people and organizations in the digital ecosystem. I was editor for several books and journal special issues. Moreover, I have published a book, papers on international conferences, book series and journals.

SELECTED PUBLICATIONS

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About Me:
Oliver Müller is Professor of Management Information Systems and Data Analytics at Paderborn University. He holds a BSc and MSc in Information Systems and Business & Management at Paderborn University. He holds a Ph.D. from the University of Münster’s School of Business and Economics. In his research, Oliver studies how organizations and individuals contribute to social and organizational artifacts and organizational systems. At the moment, my focus lies on digital innovations and business transformation affecting people and organizations in the digital ecosystem. I was editor for several books and journal special issues. Moreover, I have published a book, papers on international conferences, book series and journals.

SELECTED PUBLICATIONS

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About Me:
Stefano Za is Assistant Professor of Information Systems at the Department of Economics Aziendale (DEA). Stefano Za received his Ph.D. in Information Systems from the University of Milan. Stefano Za worked as research assistant at the University of Bologna, the University of Milan, and the University of Parma. Stefano Za has published single-authored and co-authored articles and papers in top-tier international journals such as Journal of Management Information Systems, Information Systems Frontiers, and European Journal of Information Systems. Stefano Za is the author of a book on digital transformation and adaptive management, published by Springer in 2020. Stefano Za’s research interests are in the areas of digital transformation, organizational change, and information systems. Stefano Za has received several research grants and has been awarded several research prizes. Stefano Za has presented his research at several international conferences and has served as program committee member and reviewer for national and international conferences and journals.

SELECTED PUBLICATIONS

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About Me:
I am head of the Chair of Industrial Sales and Service Engineering at the Ruhr-Universität Bochum. My main research interests are in the areas of industrial sales, service, and innovation management. In particular, my team and I investigate how the innovation of industrial services can be supported methodically and technically. Our work enables enterprises to develop novel and digitally enabled B2B service offerings, especially so-called smart services, as well as efficient service processes. Amongst others, I am principal investigator of the consortium projects Smart Service Retrofits and Personalized Assistance Systems in Production and Service (PersonA), both funded by the German Federal Ministry of Education and Research (BMBF). Together with the IHK Mit- tleres Ruhrgebiet, we recently opened our new innovation lab, the Leonards Lounge (www.aleonardolounge.de).

SELECTED PUBLICATIONS


About Me:
Marco De Marco is full professor of Organization and Information Systems at Università Telematica Internazionale UNINETTUNO in Rome where he serves also as Dean of the Faculty of Economics. He is the author of several books and numerous essays and articles; mainly on the development of information systems, the impacts of technology on organizations and e-government. He is a member of the editorial board of several academic journals. In 2008 and 2009 he was a Board committee member of the Association for Information Systems, representing Europe, Africa, and the Middle East. His main research interests have included information systems development and performance measurement methodologies. He has been serving as officer of the major conference on Information Systems ICIS, ECIS, MCIS and he was co-founder of the Italian chapter of the AIS. At ICIS 2010 he was awarded the AIS Fellow Prize for his contribution to the IS discipline.

SELECTED PUBLICATIONS


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Nowadays, conceptual modeling supports a variety of business tasks aimed to improve the productivity of companies among different industries. Conceptual models capture various aspects of a company’s structure and behavior, such as business processes, business data, and organization. By documenting these aspects through visual representations provided by conceptual models, business analysts can gain a quick overview of how the company works in detail. Hence, conceptual models serve not only to document but also to analyze specific aspects of corporate reality to support economic decision-making. For instance, the use of conceptual models supports Business Process Improvement, Predictive Analytics, Software Customizing, Workflow Management, and Compliance Management. Due to their considerable potential to support decision-making, many companies have created large collections of conceptual models. This makes it difficult for analysts to analyze conceptual models in order to support their business tasks. Hence, the Competence Center for Conceptual Modeling focuses on the development of novel methodologies, providing automatic support for the design and analysis of conceptual modeling in different business domains. In particular, we worked on the following topics:

**CONCEPTUAL MODELING**

Model Query Languages: With query languages, analysts can search for sections in conceptual models that match a specific structure with specific contents. Such model query languages serve to, for instance, identify inefficiencies in business processes, searching for legal violations of information systems, or generating instances, for example, to assure benefits automatically and support analysts in resolving them with corresponding inconsistencies, for instance. We have developed a methodology that can identify such inconsistencies automatically and support analysts in resolving them with corresponding inconsistencies. We are happy that we just have started a research project on this topic, which is funded by the DFG for the next two years.

**SECTIONED PUBLICATIONS**


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**COMPETENCE CENTERS**

Nowadays, conceptual modeling supports a variety of business tasks aimed to improve the productivity of companies among different industries. Conceptual models capture various aspects of a company’s structure and behavior, such as business processes, business data, and organization. By documenting these aspects through visual representations provided by conceptual models, business analysts can gain a quick overview of how the company works in detail. Hence, conceptual models serve not only to document but also to analyze specific aspects of corporate reality to support economic decision-making. For instance, the use of conceptual models supports Business Process Improvement, Predictive Analytics, Software Customizing, Workflow Management, and Compliance Management. Due to their considerable potential to support decision-making, many companies have created large collections of conceptual models. This makes it difficult for analysts to analyze conceptual models in order to support their business tasks. Hence, the Competence Center for Conceptual Modeling focuses on the development of novel methodologies, providing automatic support for the design and analysis of conceptual modeling in different business domains. In particular, we worked on the following topics:

**Model Query Languages:** With query languages, analysts can search for sections in conceptual models that match a specific structure with specific contents. Such model query languages serve to, for instance, identifying inefficiencies in business processes, searching for legal violations of information systems, or generating database tables automatically from a data model. Particular query languages that we developed at the Competence Center for Conceptual Modeling are the Generic Model Query Language (GMLQ) and the Diagrammed Model Query Language (DMQL). Last year, we were invited to contribute to an upcoming state-of-the-art book on process query languages.

**Business Rules Management:** Business rules are prescriptions that a company has to comply with in order not to face negative monetary or legal effects. One task of Business Rules Management is to identify rules that are relevant for companies and to describe them as formal patterns so they can be applied automatically. Such patterns can be used as input for the above-mentioned query languages, for instance, and they define model sections of interest that represent compliance violations, process weaknesses, errors or the like. In several empiric studies, we identified more than 100 query patterns that can be used in business process management projects, for instance, to identify business process compliance violations or inefficiencies. Another task of Business Rules Management is to maintain the repositories of business rules in order to cope with inconsistencies, for instance. We have developed a methodology that can identify such inconsistencies automatically and support analysts in resolving them with corresponding inconsistencies. We are happy that we just have started a research project on this topic, which is funded by the DFG for the next two years.

**Selected Publications**


COMPETENCE CENTERS

CRISES MANAGEMENT

The Competence Center for Crisis Management (C³M) integrates research efforts of the ERCIS network in the domains of crisis management and humanitarian logistics. Our main objective is to identify relevant challenges in practitioner realities and to design appropriate socio-technical solutions. Within C³M we investigate the role of Information and Communication Technologies (ICT) concerning logistics and supply chain management. C³M integrates a collaborating network of different practitioner organizations and research groups from the crisis management and humanitarian logistics domain. The competence center concentrates on six research topics with the application domain, starting at the visualization and modeling of processes, up to the analysis and coordination of humanitarian relief chains.

Another highlight was the continuation of our track “Logistics and Supply-Chain Management in Crisis Response” with Prof. Dr. Gyöngyi Kovacs from the HUMLOG Institute at the Hanken School of Economics at the 16th International Conference on Information Systems for Crisis Response and Management (ISCRAM) in Valencia, Spain. The fruitful collaboration has been no further strengthened and we are happy to announce that the board member of the Humanitarian Logistics Association, George Fenton, joined our group of track chairs for the ISCRAM Conference next year in Blacksburg, USA. This allows us to extend the regular double-blind review process by adding one practitioner review per submission, which will further increase the review quality and allows for a better knowledge sharing between research and practice.

In the context of the DRIVER+ Project (Driving Innovation in Crisis Management for European Resilience, www.driver-project.eu), funded under 7th Framework Programme of the European Commission, great success has been achieved in two key activities of C³M: First, we are very proud of delivering the final version of the handbook on the “Trial Guidance Methodology” (TGM). Together with Dr. Chiara Fonio, from the EC Joint Core Centre in Ispra, Italy, we applied an agile development of the DRIVER+ methodology for systematic assessment of innovations in crisis management. We are very grateful for all the interest and feedback from the various CM practitioner organizations in Europe. In particular, we would like to thank the Swedish Civil Contingencies Agency (MSB) as well as the EU-funded BroadWay Project for inviting us to explore application potential of the TGM beyond the DRIVER+ project. Besides, we are also more than happy of having the TGM selected as a potential CEN (European Committee for Standardization) standard and to chair the respective CEN Workshop Agreement on the TGM.

Next to the TGM related results, our second key-activities covered our methodological support of the DRIVER+ trials with the Safety Region Haaglanden in The Netherlands (May) and Austrian Red Cross in Austria (September) as well as the final demo with the EU Emergency Response Coordination Centre in Poland (November). We were happy to have contributed to these great events and are very grateful for all we have learned from the involved practitioners. Within these trials, a special highlight was that our simulation environment HumLogSUITE has been selected as an innovative solution for managing mass evacuations in the area of The Hague, Netherlands. The selection of our solution was not only a great acknowledgment of our research efforts in the past years, but was also an exceptional experience in seeing research results being transferred into practice.

All the incredible amount of data, insights, and new ideas gathered during this year will certainly keep us busy with publications in the year 2020. Last but not least, we would also like to thank Roman Poperehove for inviting us to permanently exhibiting HumLogSUITE in the Future Security Lab at the Einstein Center in Berlin.

We would like to thank all our friends and partners for the great exchanges and collaborations in the year 2019 and we are looking for their continuation as well as some promising new initiatives in the next year.

SELECTED PUBLICATIONS


The Digital Transformation in SMEs Competence Center (DT in SMEs CC) is a joint effort of several ERCIS institutional members, namely University of Agder, University of Luleå, University of Münster, University of Turku, University of Twente, University of Minho, Wroclaw University of Science and Technology. The Competence Center aims at encouraging research and providing expertise on the digital transformation of SMEs. Our research work in the field of information systems (IS) focuses on both practical and theoretical problems of adopting digital technologies to transform the business and leverage the opportunities stemming from the impact of those technology across society.

We support the use of a broad range of research approaches and methods to study the relevant IS phenomena and develop methodological and technological solutions for SMEs. In terms of theoretical contributions, researching the digital transformation in the IS field may be concerned with (Majchrzak et al., 2016):

1. elucidating a specific SME challenge related with the IT use or a problem that IT may solve – theory of the problem;
2. explaining how and why IT, paired with digital capabilities, can contribute to solving a particular SME problem or expand its reach (Morakanyane et al., 2017) – theory of the solution.

Given that the focus of research is on emerging technology, an explicit effort to anticipate the unintended or negative outcomes of their adoption is a relevant contribution of the IS field. The speed at which technology with disruptive potential is available in the market makes it necessary to understand in advance (1) the possibilities of alternative uses to that which guided the development of the technology, (2) the systemic challenges of its integration in the SME and (3) the threats to information security that the technology entails.

The activities carried out in late 2018 and in 2019 have been aimed at establishing the competence center and initiating collaboration among its members. In this regard, the following efforts have been made:

1. The website of the competence center was created and can be accessed from: https://ccdt.ercis.org/
2. The ERCIS Digital Transformation Lab is in the process of being formalized at the Department of Information Systems of the University of Minho.

PROJECT ACTIVITIES

Several projects were submitted with the collaboration of members from ERCIS, including:

• Cost Action "OPEn innovation Excellence Network".
  The action was submitted for the third time in September 2019. It aims to advance the understanding of the OI antecedents, hampering factors, and of the challenges present in innovation ecosystems. However, OI is a multi-level phenomenon. Therefore, the Action is structured along three dimensions that describe as many levels of analysis of the OI initiatives: intra-organizational; organizational; inter-organizational. The intra-organizational dimension will focus on the social and cognitive factors pertaining to OI, individually and at group-level. The organizational dimension will explore the factors, tools, and measures suitable to ensure a successful implementation and assess the performance of an OI approach. Finally, the inter-organizational dimension will focus on the processes of co-creation that occur in networks of organizations, OI platforms and the initiatives of crowdsourcing and crowdfunding.
  The action includes 73 proposers from 32 countries. The proposers from ERCIS are UMINHO, UIA, TalTech, KTU, UMaribor, and UNISG.

• Virtual Open Innovation Lab (VOIL) – ERASMUS +: KA203 – Strategic Partner- ships for higher education. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform Micro, Small and Medium Enterprises – SMEs.
  There are 9 project proposers from 7 countries and the members from ERCIS are WWU, UMINHO, KTU and UIA. The project was submitted to the German national agency and approved to start in October 2019.

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https://ccdt.ercis.org/
The E-Government Competence Center brings together members in the ERCIS net-work working on digitalization in the public domain. Our research covers a broad range from individuals’ use of e-government technology to e-participation to process management.

Master’s Program Public Sector Innovation and E-Governance (PIONEER)

PIONEER is a joint master program organized by the KU Leuven, the University of Münster and TalTech University Tallinn providing the students with interdisciplinary expertise. The first cohort of PIONEER students successfully completed their studies with the defense of their theses in summer, congratulations!

Symposium for Information Systems in Public Administration (FTVI 2019)

In March 2019 the Symposium for Information Systems in Public Administration (FTVI 2019) took place in Münster. Around 60 participants from academia and practice visited Münster for two days and discussed recent issues of Public Sector digitalization. The proceedings of the symposium are published in Lecture Notes in Informatics.

Study on Citizen Journey

Up to now, the public sector has taken a supply-oriented approach to the design of electronic services for citizens while companies in the private sector have been focusing on demand-oriented service design for years. So-called ‘customer journeys’, which focus on improving the service experience of customers, are used to better understand the perception of services by customers and to tailor the use of online services to that perception. Especially against the background of the stagnating e-government usage rates, the necessity for a user-oriented design of public services is tremendous. In a project, researchers from the competence center examine the applicability of customer journey paths to the public sector and develop a so-called e-Government Citizen Journey.

Study on Comparing European E-Government Strategies

Large, federal countries such as Germany encounter challenges in their digitalisation of the public sector, which raises the question how Germany can learn from European partners that are already further advanced in this area. The digitisation successes of the Scandinavian countries in particular appear to be ground-breaking in this respect, whereby the question arises as to how far the results can be transferred to German conditions there. Researchers from the competence center have transferred public sector content into a project where they critically analyse the transferability of e-government strategies as well as experiences in their implementation, especially in a direct comparison of Denmark and Germany.

Study on imparting competences in the public sector

New learning formats are becoming increasingly important for imparting electronic competences in the public sector. Existing studies have shown that “gaming”, i.e. the acquisition of competences in a playful form, e.g. by simulation, is a promising possibility, since very realistic scenarios and problems can be depicted without exposing the “players” to real-world risks. Employees in public administrations usually only have limited time resources for further training in their daily work, so that a modular or sequential structure of a simulation enables the targeted acquisition of competences in a compressed form. Researchers from the competence center are developing a modular simulation game for competence acquisition in the public sector.

Joint research activities between LUISS and University of Agder

The research collaboration between LUISS, UIA and personal members of the ERCIS networks continues in 2019, focusing on various aspects related to the e-government area. Joint research activities are conducted in Rome fall 2019, focusing on participation and decision making in online communities, to understand how collective decisions are made within eParticipation initiatives, based on empirical work related to the Five Star Movement (one of the major political parties in Italy organising most of their activities online). Furthermore, the researchers are also exploring the issue of openness and closeness within this organisation, as well as exploring discussions in social media to explore their deliberative qualities.

Research on multi-channel complexity

In spite of massive investment and increased adoption of digital services, citizens continue to use traditional channels to interact with public organizations. The channel choice (CC) field of research tries to understand citizens’ interactions with public authorities to make the interaction more efficient and increase citizen satisfaction. Researchers from the competence center have collaborated with researchers from the IT University Copenhagen in a sequential mixed methods study which compares observations of citizen-caseworker interaction in a call center, contextual interviews with callers, and a survey classifying topics from 10,000 telephone calls. Specifically, the study explores the multi-perspective of real-life CC and the problems which cause people to call.

Nadine Ogonek finished her PhD

In 2019, Nadine Ogonek of the E-Government Team in Münster finished her PhD and defended her thesis on e-government competences successfully in November. Congratulations, Nadine!

Publications


The Service Science Competence Center is ERCIS’ primary unit for conducting research and industry projects in the area of service management and service engineering. The team currently consists of two professors and 14 research assistants. The proliferation of the Service Economy has changed the way in which the creation of value is perceived throughout various industry sectors and societies. Selling products is increasingly replaced by customized service offerings and alternative revenue streams (e.g. power by the-hour). Research in the academic discipline of Service Science, Management and Engineering is focused on understanding and facilitating the creation of value in service systems, involving interactions of service providers and service customers. The mission of the ERCIS Service Science Competence Center is twofold. On the one hand, we strive to understand the nature and impact of service orientation on commercial businesses, the public sector, and society in general. On the other hand, we contribute to further shaping the course of the service economy by designing new business solutions and software artifacts. Our research is equally dedicated to research excellence and to providing results that companies can utilize to further shape their businesses in the service society. We achieve this goal based on a network of excellent researchers in the ERCIS network.

**Selected Research Projects**

**FLEMING**
The German energy and climate policy focuses on broad coverage of renewable energies and electric mobility. Therefore, network operators have to face with load fluctuations and even overloading, while being under immense cost and efficiency pressure. The project FLEMING aims to revolutionize the usage of sensors and the continuous supervision of distribution grids. It relies on methods of artificial intelligence (AI) and an improvement in sensor technologies to successfully contribute to the energy and mobility transition. Project Paderborn University, ABB Corporate Research Center, FhR at RWTH Aachen, Karlsruhe Institute of Technology, SÜC Energy, and Heimann Sensor GmbH. The time frame for the project is September 1st, 2019 to August 31st, 2022.

**Smart Market Square**
The research project smartmarket² uses the innovation potential of digitization to develop new value-added services and applications to strengthen the high streets’ attractiveness. It thus offers innovative contributions to preserving and enhancing the character and profile of urban life, which is profoundly shaped by high streets. The project adopts successful e-commerce strategies for high streets to create interactive shopping experiences. The aim is to develop data-driven services and mobile applications that enable digital co-production or co-creation of the shopping experience in high streets. smartmarket² also creates new data sources on customer behavior that offer analysis potential for science and practice alike.

More information: [https://www.smartmarketsquare.de/](https://www.smartmarketsquare.de/)

**ACADEMIC ACTIVITIES**

Martin Matzner and the Chair of Digital Industrial Service Systems at FAU organized the Doctoral Consortium of the 14th International Tagung Wirtschaftsinformatik in 2019 and will also organize it for the 2020 conference. The doctoral consortium offers PhD students the opportunity to discuss their dissertations with renowned researchers and collect their feedback and input.

Daniel Beverungen and his team at the Paderborn University chair and organized the Service Systems Innovation Conference in 2019. On April 8th and 9th, more than 300 participants from research and business visited Paderborn to discuss questions such as “How do services advance the digital transformation of the future economy and society?” and many more.

**Personal Changes**

Karsten Kraume has joined the Service Science Competence Center as Academic Head besides Daniel Beverungen and Martin Matzner.

**Editorial Jobs**

Daniel Beverungen is Associate Editor of Business & Information Systems Engineering (BISE). Together with Christian Janiesch, he served as Track Chair for Industry 4.0 at the 2019 IEEE Conference on Business Informatics. Additionally, he successfully hosted the track “Service Engineering, Innovation and Management” at the 2019 ECIS Conference in Stockholm, together with Christoph Breidbach and Lyzanee Lessard. At the WI 2019 conference, Daniel Beverungen and Christine Lehrer hosted the track “Digital Transformation and Services”.

Martin Matzner is one of the Editors of the Journal of Service Management Research. Together with Jeffrey Parsons, he served as Track Chair for Data-Driven Business Applications at the 2019 IEEE Conference on Business Informatics.

**AWARDS**

Daniel Beverungen and Verena Wolf have been nominated for the Best Research-in-Progress Paper Award at ECIS 2019.

Jan Betzing, Marco Niemann and Ingo Berendes won the Best Demo Award at the WI 2019.

Several researchers at the Service Science Competence Center have been awarded with Marie-Sklodowska-Curie Fellowships of the European Commission.

**SELECTED PUBLICATIONS**


Smarter Work

The Competence Center for Smarter Work studies new ways of working, virtual modes of organizing and organizational transformation based on communication and collaboration technologies.

It provides research and transformation support in the area of Unified Communication & Collaboration (UCC) and Social Media, which facilitate extended and richer modes of interaction among stakeholders. Customer as well as partner relations can be actively transformed by the introduction of UCC and Social Media. Furthermore, tools can be used to improve cooperation among employees, to strengthen social relations or to identify experts and specific information. The integration of these technologies and related concepts into the workplace provides profound challenges and opportunities for organizational development and innovation. We engage in detailed multi method workplace studies in order to gain deep insights into existing work practices. Based on the information and communication patterns and the relationship network of different stakeholders, we suggest scenarios for new work practices and transformation paths. In our scenarios for smarter work we also reflect issues of corporate social responsibilities and employee wellbeing.

Workplace Analytics

(Pis. S. Lansmann, S. Schellhammer, J. Hallmann)

In the project seminar “Workplace Analytics” six master students investigated event log data from Windows 10 machines. The project team collected and analyzed data which is created by default by the operating system, e.g. the login and logoff events. Based on this data it is possible to approximate employee behavior, e.g. to see patterns when employees start and end their workday or how many hours they spent on their machine during the day. Technically, the master students developed a Datawarehouse system to store the anonymized log data accompanied with a frontend, which runs locally as a browser application of the employees and offers individual analytics functionality.

- **Automation and the Rise of Hidden Work**
  (Pis. Stefan Klein, Mary Beth Watson-Manheim)

For decades the productivity paradox has drawn the attention of IS scholars and economists alike and continues to do so in light of recent developments in AI. We would like to add another hypothesis to explain the paradox: the growing amount of hidden human work. We define hidden human work as the taken-for-granted and unaccounted-for activities that have seeped into, and in some instances reached a tipping point in, the performance of technology-assisted work. We argue this hidden work is significant and consequential in that the benefits of the technology cannot be realized without skillful performance of these activities.

- **Enterprise Social Networks and the Dialectics of Collaborative Advantages and Collaborative Overload**
  (Pis. Simon Lansmann)

Against the backdrop of the proliferation of Enterprise Social Networks (ESN), we aim at conceptualizing a potential unintended consequence of the increasing share of communication and collaboration activities: collaborative overload. Particularly, we investigate how ESNs are impacting work rhythms which can lead, e.g., to increased fragmentation and acceleration of work.

- **Leadership in Online Communities**
  (Pis. Rewat Thapa, Simeon Vidolov)

The project studies leadership and governance structure in Open Source Software communities using the example of Drupal. Extensive collection of digital community communication data (developers’ forum) is combined by a theoretically informed analysis of leadership models.

ongoing research initiatives

- Organizational Implications of the Transformation of Individual and Corporate Communication Media Repertoires
  (Pis. Simon Lansmann)

We are currently analyzing the adoption and appropriation of Microsoft Teams within an international systems integrator with over 31,000 employees. Specifically, we investigate how employees integrate the tool into their existing set of communication tools and how teams is changing the employees’ work.

- Enterprise Social Networks and the Dialectics of Collaborative Advantages and Collaborative Overload
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- **Hidden Work**

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- **People Analytics**
  (Pis. Joschka Hüllmann, Katharina Dassel)

People Analytics (PA), a data-driven, evidence-based approach to managing personnel, has received a lot of attention from practitioners. Moving beyond the hype, we critically examine the nature of PA in the theoretical discourse and consider wider implications of its use, e.g. regarding employee privacy and trust.

- **Sustainable High-Performance Work: Biomarkers and Psychological Mechanisms**
  (Pis. Jana Mattern)

In cooperation with SYMK (synk-group.com), a company focused on leadership development, the Competence Center Smarter Work offers the “Sustainable High Performance” program. The program is aimed both at individual executives, who perform above average and who want to make sure that they can sustain their performance in the long run, and at companies that want to offer this program to their executives.

Participants in the program will learn to understand subconscious behavioral patterns and will get an insight into their physiological well-being, assessed through individual bio markers (heart rate variability). Further, concrete stress situations will be simulated and participants will be introduced to innovative methods of stress avoidance and management. In sum, this program provides the fundaments for a professional life that is long, productive and healthy.

- **People Analytics**
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People Analytics (PA), a data-driven, evidence-based approach to managing personnel, has received a lot of attention from practitioners. Moving beyond the hype, we critically examine the nature of PA in the theoretical discourse and consider wider implications of its use, e.g. regarding employee privacy and trust.
A new topic addressed by members of the CC SMA (and related to information security research) focuses on economic aspects of disinformation for companies. The current research proposal considers itself as complementary to the state-of-the-art research in data leakage protection and detection. It addresses the consequences of data leakages and their misuse in the context of reputation damaging for companies using social media.

Moreover, the CC collaborates with the joint European initiative CLAIRE, i.e. the Confederation of Laboratories for Artificial Intelligence Research in Europe by providing real-world application scenarios for artificial intelligence approaches.

At MISDOM 2019, fifteen research groups presented their work in scientific sessions. The topics ranged from populism and conspiracy over propaganda as well as fake and hate detection towards technical aspects like social bots and infrastructures. The scientific program was framed by five invited keynote talks given by André Calero Valdez (University of Aachen), Greg Barber (Washington Post), Juliane von Reppert-Bismarck (Project Lie Detectors), Stefano Cresci (IIT-CNRS, University of Pisa), and Christian Stocker (HAW Hamburg).

PUBLICATIONS
As a result of scientific cooperation during 2019 – especially also in the context of MISDOM 2019 – the members of the competence center published several articles and working papers.


The CC SMA supports the upcoming Multidisciplinary International Symposium on Disinformation in Open Online Media held in Leiden, The Netherlands, during April 2020. The symposium will continue the successful first edition of MISDOM in conjunction with the European RISE_SMA consortium.

The CC SMA will also organize a parallel session on “Data, Algorithms, and Humans in Digital Manipulation” at the Human Computer Interaction International Conference in Copenhagen, 2020.

The Competence Center Social Media Analytics (CC SMA) deals with challenges due to the rapid and often disruptive evolution of social media technology. The current research focus of the CC SMA is the misuse of social media technology for disinformation, propaganda, and fake news distribution. The international partners approach the topic from the different angles of their respective disciplines: computer science, psychology, statistics, journalism and media, communication science, as well as mathematics.

Besides semi- to fully automatized systems that are able to act on behalf of humans (often called “social bots”), the CC SMA increasingly focuses on the human factor in activities ranging from political campaigning to hate speech. In this context, the University of Münster established a new funded research project together with a local news outlet that strives for the detection of hate speech in online comments.

In Hamburg. Scientists from the multiple disciplines like computer science, social science, psychology, political science, statistics, information systems, and humanities were present. Additionally, many media professionals, governmental and public organizations as well as representatives of non-governmental organizations participated.

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PUBLICATIONS
As a result of scientific cooperation during 2019 – especially also in the context of MISDOM 2019 – the members of the competence center published several articles and working papers.


The CC SMA supports the upcoming Multidisciplinary International Symposium on Disinformation in Open Online Media held in Leiden, The Netherlands, during April 2020. The symposium will continue the successful first edition of MISDOM in conjunction with the European RISE_SMA consortium.

The CC SMA will also organize a parallel session on “Data, Algorithms, and Humans in Digital Manipulation” at the Human Computer Interaction International Conference in Copenhagen, 2020.

The Competence Center Social Media Analytics (CC SMA) deals with challenges due to the rapid and often disruptive evolution of social media technology. The current research focus of the CC SMA is the misuse of social media technology for disinformation, propaganda, and fake news distribution. The international partners approach the topic from the different angles of their respective disciplines: computer science, psychology, statistics, journalism and media, communication science, as well as mathematics.

Besides semi- to fully automatized systems that are able to act on behalf of humans (often called “social bots”), the CC SMA increasingly focuses on the human factor in activities ranging from political campaigning to hate speech. In this context, the University of Münster established a new funded research project together with a local news outlet that strives for the detection of hate speech in online commentary sections.

In Hamburg. Scientists from the multiple disciplines like computer science, social science, psychology, political science, statistics, information systems, and humanities were present. Additionally, many media professionals, governmental and public organizations as well as representatives of non-governmental organizations participated.
The University of Liechtenstein is leading an Erasmus+ funded project on explorative business process management (BPM). In cooperation with the Vienna University of Economics and Business and the University of Elyasyn, a reference module is developed that covers different aspects of explorative BPM. This is important because companies operate in a dynamic environment which requires process efficiency while at the same time, it offers opportunities for innovation. Particular focus is placed on the role of digital technologies. The project will result in a reference module including a set of various lectures and recommendations on how explorative BPM can be taught in Europe and beyond.

The University of Liechtenstein (project lead), the University of Münster and the National University of Ireland are working together on the Erasmus+ funded project “Text Mining for Curriculum Design for Multiple Information Systems Disciplines”. Traditionally, curriculum design is performed manually by academics with years of experience in the design process. Decisions about content and competences are often made based on subjective impressions of individuals. The discipline of data science, in particular text mining, offers new opportunities to support the curriculum design process by using the abundance of information available such as job ads from industry, curricula from various academic institutions through semi-automatic means. The methodology that this project will develop and make available to the public could therefore facilitate curriculum design in other disciplines across Europe as well.

The University of Liechtenstein, the Vienna University of Economics and Business, the University of Cologne and Radboud University have successfully acquired a new Erasmus+ funded project on Business Process Management (BPM) and Organizational Theory. The project is led by Assistant Professor Thomas Grisold (University of Liechtenstein) and addresses the question of how we can combine theories and methods from organizational studies into BPM. This question is important because both fields are concerned with process work in organizations but they look at it from different perspectives and with different premises. This project will result in a transdisciplinary curriculum which enables aspiring business process managers to take a more holistic view on business processes and routines.

Some members of the ERCIS Network participated in the development of a Cost proposal – Open innovation Excellence Network. The proposal was not accepted for funding but there is a common interest in improving it and resubmit.

The University of Minho lead the effort to develop an Erasmus+ project proposal – VOIL: Virtual Open Innovation Lab that was submitted to the call of the KA203 – Strategic Partnerships for higher education. The project aims at developing a curriculum to guide the learning of emerging technologies and assess their potential for innovating and digitally transform SMEs. Together with the curriculum, guidelines will be produced to help defining a digital transformation strategy and a platform will be developed to support simulation-based learning of technologies such as Internet of Things, Blockchain and Intelligent Systems. The project was approved and it has had the kick-off meeting on the 4th and 5th November, 2019. The project is coordinated by University of Muenster and includes 9 partners in a total of 7 European countries. Three other partners belong to ERCIS: Kaunas University of Technology, University of Agder and University of Minho.
Since 2018, the Institute of Information Systems of the University of Liechtenstein leads an Erasmus+ project focusing on the use of virtual reality (VR) in higher education. Together with the ERCIS partners University of Duisburg-Essen (Stefan Stieglitz) and University of Agder (Tim A. Majchrzak) and the associated partners (University of Münster, University of Nebraska Omaha), first promising results have been identified, which show great potential for VR-enhanced education practices. Based on literature and market analyses, current VR practices in education have been identified.

Additionally, based on three design thinking workshops, students and lecturers identified together several innovative application scenarios for the use of VR in class. Currently, the project partners plan to implement and test first VR prototypes in university courses. In the end, the project’s aim is to provide recommendations and guiding material on the use of VR in higher education.


Twitter: https://twitter.com/VRHighEducation

Twitter Handle: @VRHighEducation
The joint project focusing on public sectors’ role within the sharing economy was initiated back in 2018, and continued also in 2019. Participants included Alessio Braccini and Stefano Za from LUISS, as well as Sara Hofmann and Øystein Saabø from University of Agder. Activities included several research visits, as well as dissemination activities presenting the results of the research. Results from this work have so far been published at the IFIP WG 8.5 Electronic Participation (ePart) (in 2018) and in the Information Government Journal in 2019.

References for joint papers:


The research project “Establishing Modern Master-Level Studies in Information Systems” (MASTIS) was recently completed. The project consisted of a large consortium of nine European universities, led by the University Lyon 2 (France), seven Ukrainians and two Montenegrin universities. The main aim of the project was to improve Master Programmes in Information Systems according to the needs of the modern society, to bring the universities closer to changes in global labour market and world education sphere; to enable them to stay responsive to employers’ needs; to give students an idea of various job profiles in the Information System domain; to ensure employability throughout graduates’ professional and soft skills.

In practice, the MASTIS project successfully developed a new master programme in Information Systems based on the expertise and knowledge gained from existing research, project work, expert knowledge of the EU partners and specific needs of the Ukrainian and Montenegrin requirements. As part of the project work, the developed master programme was piloted and now implemented in all of the Ukrainian and Montenegrin universities.

Therefore, MASTIS reached its goal to enable the partner countries’ EU universities to modernize Information System education based on the student-oriented principals, strong university-enterprise cooperation and modern approaches to the education.

Finally, the programme will give the partner countries universities an opportunity to prepare competitive specialists for Ukrainian, Montenegrin and the global labour market.

MASTIS PROJECT – ESTABLISHING MODERN MASTER-LEVEL STUDIES IN INFORMATION SYSTEMS – COMPLETED

GENDER EQUALITY IN INFORMATION SCIENCES AND TECHNOLOGY RESEARCH INSTITUTIONS WITH THE EQUAL-IST PROJECT

EQUAL-IST ("Gender Equality Plans for Information Sciences and Technology Research Institutions") was an international project funded by the European Commission (EC) within the Horizon 2020 Framework Programme. The project started in June 2016 and was successfully completed after its final review in July 2019. The project was aimed at introducing structural changes to enhance gender equality, diversity, and work-family balance at the six participating Information and Communications Technology (ICT) and Information Sciences and Technology (IST) research institutions. It has been demonstrated that ICT and IST belong to the fields, where gender inequalities at all levels can be observed.

The project consortium was formed by such ERCIS member institutions as the University of Münster (Münster, Germany), the University of Turku (Turku, Finland), Kaunas University of Technology (Kaunas, Lithuania), the University of Minho (Guimarães, Portugal), and Simon Kuznets Karhiv National University of Economics (Kharkiv, Ukraine). Two further research institutions included Ca’ Foscari University of Venice (Venice, Italy) and the University of Modena and Reggio Emilia (Modena, Italy). The project was coordinated by the ViLabs company (Thessaloniki, Greece).

The following key activities were performed within the project:

First, best practices were collected in order to inform the further course of action. For that, the analysis of related projects aimed at the promotion of gender equality in research institutions was performed.

Second, internal gender audits were conducted at the participating research institutions. The objectives here were to reveal (1) the specific challenges related to gender equality, diversity, and work-family balance that each institution faced, as well as (2) the promising initiatives to address each of the identified challenges.

Third, tailored Gender Equality Plans (GEPs) were designed for each research institution in a participatory manner and approved by respective decision-makers. This process was facilitated by the CrowdEquality idea crowdsourcing platform (www.crowdequality.eu), which was developed by the team of eight Bachelor students studying Information Systems at the University of Münster. The designed GEPs contained detailed action plans for each of the selected initiatives aimed at addressing the identified challenges.

Finally, the designed GEPs were implemented in two iterations. The implementation progress and success were continuously assessed and reported on both internally and by an external evaluator appointed for the EQUAL-IST project. The internal assessment was focused on the performed work, while the external assessment – on the impact of this work. Based on the outcomes of the 1st iteration of GEP implementation and the feedback received from the project external evaluator, the initial GEPs were refined and then implemented further during the 2nd iteration.

Further work packages of the EQUAL-IST project included project management, dissemination of all project activities, as well as ensuring that the ethics requirements set by the EC were fulfilled. All project deliverables were submitted in a timely manner and approved by the EC.

For further information please visit: www.equal-ist.eu
As a social media research project, RISE_SMA pays close attention to making research results visible to a broader audience that exceeds the scientific community. To this end, the project keeps a lively Twitter feed that features members of the network while traveling to project partners:

https://twitter.com/RISE_SMA

The topical cornerstones of the project consider how we can better extract and disseminate information using social media in critical situations such as natural and human-made disasters, but also during social movements and prior to political elections. Moreover, the project pursues the aim to standardize procedures how to ethically process social media data and safeguard the rights and freedoms of data subjects while answering pressing research questions. To this end, the project consortium works in close cooperation with the European Commission to reconcile important research and the also crucial data protection measures specified in the General Data Protection Regulation (GDPR).

In order for the project to be beneficial for everyone, RISE_SMA puts into practice a gender and diversity action plan, which, among other things, allows family-friendly secondments (30-day trips to project partners). In order to implement this action plan, the coordinators Prof. Dr. Stefan Stieglitz and Julian Marx become permanent members of the ERCIS SIG “Gender Equality”:


Apart from Twitter, the project curates a website and blog. The website provides evergreen information about the project, whereas the blog provides first-person reports from seconded researchers and practitioners that make use of the RISE_SMA network:

https://social-media-analytics.org/blog/

In 2019, positions were created for visiting researchers in the area of Business Information Systems at the University of Twente for short visits from two to twelve weeks. ERCIS members are especially invited to spend a research visit in Twente. Research visits are open for junior and senior IS faculty.

As a social media research project, RISE_SMA pays close attention to making research results visible to a broader audience that exceeds the scientific community. To this end, the project keeps a lively Twitter feed that features members of the network while traveling to project partners:

https://twitter.com/RISE_SMA
As a result of this collaboration, a series of papers have been produced and present- ed in international conferences. Some of the ideas covered in the project involve the enhancement of traditional recommenda- tion systems with social network-based in- formation, personalized recommendations for data purchase, and automatic web in- terface design recommendation.

References for published joint papers:

- Marek Kryskiewicz, Krystian Wojtkiewicz, Denis Martins: Influence Power Fac- tor for User Interface Recommendation System. ICCCI (1) 2018: 218-227. DOI: 10.1007/978-3-319-98443-8_21
- Denis Mayr Lima Martins, Gottfried Vossen, Marcin Maleszka: Supporting Online Data Purchase by Preference Rec- ommendation. SMC 2018: 3703-3708. DOI: 10.1109/SMC.2018.00627

The visiting program for international faculty (VIP program) is part of the School of Business and Economics’ (Münster University) internationalization strategy. It aims at providing a framework to institutionalize existing visiting activities and to attract new international faculty for long-term affiliations with the School. The VIP program provides different options for international faculty to engage in teaching, re- search and PhD supervision activities. Students benefit from the experience and expertise of renowned international- al visiting scholars (“Internationalization at home”). At the same time, the English taught program of the School is being systematically developed through the involvement of international- al guests.

The use of Recommender Systems has im- proved online markets in several aspects by promoting individual personalization of offers and contents, helping customers to find desired products, enhancing dis- covery of novel or unexpected items, and improving customer loyalty. For providing such a personalization, it is essential to gather information about the individual or user community such as their interests, goals, behaviors, and preferences. Capi- talizing on that, in the last two years, the Department of Information Systems at the Wroclaw University of Science and Tech- nology and the DBIS Group of the Univer- sity of Münster collaborated in the project “Deep Recommendation based on Collect- tive Knowledge“, which aims to investigate whether the collective knowledge of user communities could extend personalization in Recommender Systems.
In April 2019, around 20 students of the Master’s programme in Information Systems of the University of Liechtenstein travelled to Vienna together with Dr. Leona Chandra Kruse, Assistant Professor at the Institute for Information Systems of the University of Liechtenstein. They attended lectures on “Process Mining” given by Prof. Dr. Jan Mendling at the Vienna University of Economics and Business, visited companies and did some sightseeing. The study trip offered the students a unique opportunity to get to know the capital of Austria and the campus of WU Vienna.

As part of the University of Liechtenstein’s master’s programme in Information Systems, Prof. Dr. Gottfried Vossen, Denis Martins, Dr. Armin Stein (University of Münster), and Prof. Dr. Jan Mendling (WU Vienna) visited the University of Liechtenstein, where they delivered lectures for the students.

Prof. Dr. Jan vom Brocke from the University of Liechtenstein is Adjunct Lecture at the University of St. Gallen and Adjunct Professor at the National University of Ireland Galway. Further, Prof. Dr. Stefan Seidel (University Liechtenstein) delivered lectures on Green Information Systems at the National University of Ireland in Galway.

This year, the Liechtenstein Winter School, organized by the Institute for Information Systems, took place for the eighth time. Bachelor students from all over the world, including Australia, attended lectures on Business Process Management, Data Science and Data & Application Security at the University of Liechtenstein. The students applied the new content in case studies and exercises. The lessons were designed in cooperation with the University of Münster. A company visit to Hilti AG in Schaan and a sledding trip to Malbun rounded off the program.

For the sixth time, the University of Liechtenstein organized a ski seminar for PhD students. The seminar took place at Flumserberg and was led by Prof. Dr. Stefan Seidel, University of Liechtenstein, Prof. Dr. Nicholas Berente, University of Notre Dame, Prof. Dr. Roland Holten, Goethe University Frankfurt, Prof. Dr. Jan Mendling, Vienna University of Economics and Business, and Prof. Dr. Christoph Rosenkranz, University of Cologne. Twelve PhD students from different universities presented their PhD research projects and discussed current topics of Information Systems research. Joint ski tours guaranteed an unforgettable experience for all participants.
Since 2017, the University of Tallinn has been jointly offering with KU Leuven (the coordinator) and the University of Münster the innovative 120 ECTS joint master programme Erasmus Mundus Master of Science in Public Sector Innovation and e-Governance (PIONEER). The general idea behind this master programme is that the public sector needs interdisciplinary expertise in order to be able to fully benefit from the potential of ICT and technological innovations. The programme prepares experts with knowledge of both Public Administration and ICT and who, taking into account the context-specific factors, can implement a variety of technological solutions for the information society, public services and improving the efficiency of Public Administration. Graduates should be able to see the opportunities and threats of different public sector innovations as well as the essence of egovernance.

The programme has received funding from the European Commission. All 16 students from the first cohort have successfully finished the programme last August after writing their Master Thesis at one of the three universities or within a company context. The second cohort (25 students from 18 different countries) has just moved to Tallinn for their third semester, while the students of the third cohort – with 27 students from 22 countries the biggest and most diverse group so far – started their journey in Leuven.

ERCIS PhD Colloquium 2019

In 2019, the ERCIS again organised a PhD Colloquium in Pto. Pollensa, Spain. The rationale of this series is to intensively discuss the PhD endeavour of each participant, provide multi-perspectival feedback, network them, and enjoy the time together in a nice environment.

The PhD candidates had to submit an eight to ten pages dissertation paper, summarizing motivation, related work, problem statement/research gap, proposed research approach and time frame. Furthermore, each of the students had to conduct a peer review of one dissertation paper. At the venue, the candidates had to present their research for approximately 30 minutes without any means but a whiteboard and pens, leaving at least an hour for discussion. Additionally, the students had to moderate the session of the paper they reviewed. This gave eight students the opportunity to either learn sailing together, or to advance their nautical knowledge. This resulted in a great team spirit, leveraging the idea of the network to our junior scholars. The 2020 DC will again take place June 27-July 4.

For more information, have a look at http://www.erc.is/go/dc

Testimonial: Sharon Wagg, University of Loughborough

Throughout my PhD at Loughborough University I have always strived to make the most of opportunities and take them when I can. So, when I was encouraged by my supervisors Professor Louise Cooke and Dr Boyka Simeonova to apply for the European Research Centre for Information Systems Doctoral Consortia (ERCIS DC) I jumped at the chance. The ERCIS DC was a very timely experience at this stage of my PhD and was incredibly useful to present to a supportive, yet critical audience. The experience of combining a week-long sailing course with presenting and discussing research with PhD students and academics from across Europe will undoubtedly be amongst the highlights of my PhD journey. The DC built a great team spirit and a lasting legacy and I would highly recommend this to fellow PhD students.
On 30th October 2019 the 13th advisory board meeting of the European Research Center for Information Systems (ERCIS) took place in the CLAAS Greenhouse. The 30 visitors, among them renowned professors of economics and information systems of the universities Muenster and Paderborn and representatives from the advisory board member companies such as Hilti Corporation, SAP, zeb, Arvato Supply Chain Solutions and many others, came to Harsewinkel for the annual meeting to discuss current trends and challenges. After the welcome by Michael Hyllan (VP Human Resources Germany), Wolf von Wendt (Head of Digitalization and Processes BUSS), who has been driving the cooperation professionally for years, presented how digitization is changing agriculture. This was followed by conference topics on University Relation and Talent Acquisition, Automation and Preventive IT Operations through Analytics, Prediction and AI as well as the digital challenge in the eMobility context. The conference was embedded in a framework program including a factory tour of the main CLAAS plant in Harsewinkel and a visit of Hof Løeomann. CLAAS has been a member of the ERCIS advisory board since 2016. Hereby a symbiosis of interests from the Digitalization and Processes BUSS and HR departments emerges, as the membership enables CLAAS to make exclusive contact with students and professors from the Information Systems department at the University of Münster and at the same time to help shape the research program. A successfully completed group-wide project was a click dummy, which was used as a prototype in a current service project. In addition, a joint Design Thinking Workshop was offered as part of the cooperation this year, in which international students from Münster and the University of West Georgia (USA) focused not only on elaborating the content of the question, but also on learning creative methods.

If you have any questions on cooperation, please contact Lennart Haack (Manager Digitalization and Processes BUSS at CLAAS Global Sales GmbH) or representatives from the advisory board together with Wolf von Wendt (Head of Digitalization and Processes BUSS) since 2018.

Further information is available here: https://www.ercis.org/about-us/advisory-board
From July 15th to 17th, 2019, the 21st IEEE Conference on Business Informatics took place in Moscow. The event was organized by the HSE School of Business Informatics of the Faculty of Business and Management.

It was the first time that the conference was held in Russia. The main topics of the conference were dedicated to digital transformation, modern digital technologies, and their impact on business development. The Programme Committee of the conference included over 200 Russian and international experts in business informatics.

Dmitry Novikov, Director of V.A. Trapeznikov Institute of Control Sciences (RAS), and Jörg Becker, Professor at the University of Münster, and HSE Honorary Professor, chaired the conference’s Programme Committee. Professor Svetlana Maltseva, Head of the HSE School of Business Informatics, and Professor Ulrich Frank, Chair of Information Systems and Enterprise Modelling, University of Duisburg-Essen (Essen, Germany) were general chairs of the Organizing Committee. Mikhail Komarov, Deputy Head of the School of Business Informatics, chaired the Organizing Committee. Vas-ily Komilov, Deputy Head of the School of Business Informatics co-chaired the committee.

As the European Conference on Information Systems (ECIS) took place in Stockholm, Sweden, in June 2019, ERCIS members met at Knut Bar in central Stockholm to have a chat with fellow colleagues.

We are already looking forward to our next ERCIS@ECIS meeting in Marrakech, Morocco next year!

The first edition of the Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM) in Hamburg was a great success. More than 70 scientists from multiple disciplines (computer science, communication science, political science, media science, and journalism), practitioners, think tanks, and governmental officials met for an inspiring exchange of insights and ideas. The program comprised international keynotes from André Calero Valdez (RWTH Aachen University), Greg Barber (Washington Post), Stefano Cresci (University of Pisa), Juliane von Bismarck-Reppert (Lie Detectors), and Christian Stöcker (HAW Hamburg) as well as a scientific program with current research results in the context of disinformation.

More information as well as a complete video stream of the symposium is available at: www.misdoom.org

The Blockchain Forum chaired by Claudio Di Ciccio (WU Vienna, Austria), Luciano Garcia-Baruelos (Tecnologico de Monterrey, Mexico), Rick Hull (IBM T.J. Watson Research Center, NY USA), Mark Staples (Data61, CSIRO, Sydney, Australia) took place at BPM 2019. The forum aimed at providing a platform for the discussion of ongoing research and success stories on the use of blockchain for collaborative information systems. The papers selected for the Blockchain Forum showcase fresh ideas from emerging and emerging topics in the area of blockchain technologies with a special focus on, yet not limited to, business process management.

https://bpm2019.ai.wu.ac.at/call-for-blockchain-forum
ICIST 2019 —
THE 25TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES

October 10–12, 2019, Vilnius, Lithuania
https://icist.ktu.edu/

ICIST 2019 was organised by Kaunas University of Technology, a leading technical university in the Baltic States. In 2019, the promotion of interdisciplinary research remained a priority, emphasizing the combination of social and IT needs in the context of information and knowledge driven society. Traditionally, the conference targeted four major R&D areas, namely, Information Systems, Business Intelligence for Information and Software Systems, Software Engineering, and Information Technology Applications. The papers were further subdivided into nine special sessions:


The conference featured three keynotes, one workshop, and 40 paper presentations and researchers from several ERCIS partner universities were part of the conference committee. Proceedings of the event were published as a volume of Springer-Verlag CCIS series.

THE 11TH ACIIDS 2019

ACIIDS 2019 was the 11th event in a series of international scientific conferences on research and applications in the field of intelligent information and database systems. The aim of ACIIDS 2019 was to provide an international forum of research workers with scientific background on the technology of intelligent information and database systems and its various applications. The ACIIDS 2019 conference was co-organized by BINUS University (Indonesia) and Wroclaw University of Science and Technology (Poland) in co-operation with the IEEE SMC Technical Committee on Computational Collective Intelligence, European Research Center for Information Systems (ERCIS), University of Newcastle (Australia), Yeungnam University (South Korea), Leiden University (The Netherlands), Universiti Teknologi Malaysia (Malaysia), Quang Binh University (Vietnam), Ton Duc Thang University (Vietnam), and Vietnam National University, Hanoi (Vietnam). It took place in Yogyakarta in Indonesia during April 8–11, 2019.

For this edition of the conference, we received more than 300 papers from 38 countries all over the world. Each paper was peer-reviewed by at least two members of the international Program Committee and the international reviewer board. Only 124 papers with the highest quality were selected for an oral presentation and publication in these two volumes of the ACIIDS 2019 proceedings.

ERCIS Launch Pad

ERCIS Launch Pad — the annual IT business ideas competition of ERCIS — was held for the 12th time on 27th November 2019. Keeping up the tradition of past Launch Pads, it serves as platform for founders and potential founders from all over Germany to present their ideas to a top-class jury of founders, funders, and academics. As in previous years, participants of the 12th Launch Pad could win cash and attractive prizes.

For the 11th edition, which took place in 2018, the jury, where also ERCIS advisory boards members were part of, decided to invite six finalists to pitch their ideas. After entertaining presentations and intense discussions, BrainPlug won the award for best overall concept for their AI solution that monitors hundreds of cameras for responsible security while respecting privacy without the storage of biometrical data. The regional medium-sized business award as well as the audience award went to clevabit, who aims to monitor real-time health and environment data streams for better farming, helping farmers and veterinarians alike. Last but not least, Hygenator convinced the jury with best scientific grounding of their RefreshBoxx, which disinfects, dries, and refreshes footwear, sports gear, and textiles based on Ozone, UV-light, and hot air.
ADVISORY BOARD

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N U C L E U S I N N O V A T I O N M A N A G E M E N T

In Q4/2018, our innovation management program Nucleus launched in Münster. Together with WWU Münster and ERCIS, we hosted an idea contest on mobility & big data. The aim of these contests was to bring experts and young professionals together and allow them to work collaboratively on new approaches, solutions and business models.

Stay tuned for upcoming content and check out the former promotional video!

J O B O P P O R T U N I T I E S

- UX/UI Designers
- Junior Software Developer Java/Web
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- Junior Business Intelligence Manager

Feel free to contact us!

C O N T A C T

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ABOUT THE COMPANY

As a leading supplier of merchandise management systems, Bison offers complete solutions for retail. Bison has its headquarters in Sursee, employs approximately 300 staff and generates a turnover of over EUR 70 million. With over 30 years of market experience, Bison makes a reliable, secure contribution to the success of its customers. Each customer receives comprehensive and long-term support, with a focus on mutual trust and the protection of customers’ IT investments.

Bison Smart Retail Solution was specially developed for the retail sector. This solution covers the core processes for goods management and at the point of sale in full. By integrating a solution for traceability, Bison offers a modern, up-to-date solution and individually tailored to customer preferences, considerable added value is created for the customer.

The Bison Retail expertise hub has a comprehensive process knowledge and can provide and implement technical solutions, above all in all areas relating to multi-channel processes. Bison Process enables a cross channel sales approach and process management, including in-store, e-commerce and m-commerce. This industry model provides retail-specific processes. These can be individually configured to meet the company’s requirements, without programming and without losing the re-use capabilities of the software. The open architecture of Bison Process ensures the company a high level of investment protection; the software is always a step ahead of challenges in the market, both in terms of its technology and its functionality.

The product portfolio is complemented by POS solutions, electronic shelf labeling (ESL), mobile solutions for mobile end devices and digital signage solutions. Bison’s modern POS solution can be perfectly integrated into existing system environments thanks to the modular structure and its exceptional flexibility. Thanks to the ESL concept, the headquarters or individual branches can respond quickly to changing market or price situations.

The wireless base station simplifies internal processes and creates a direct connection between the shelf and POS. In addition, the electronic shelf labeling at the POS creates new possibilities in terms of information. This is used not only for product identification and pricing, but also in combination with specially developed apps or with internet of things (IoT) modules which provides further useful services for the customer in terms of traceability of the product, product features, contents (allergens) etc. Thanks to the mobile solutions, normal Smartphone devices can be turned into powerful mobile hand-held devices. The scanning solutions include a barcode scanner, a magnetic card reader and an optional Bluetooth component to connect a mobile printer. The RFID option vastly expands the range of uses. Thanks to standard or individually programmed applications, the devices offer a multitude of in-store application possibilities, e.g. stocktaking, order creation, goods-in process and picking.

Bison offers innovative communication options through digital signage. The solutions can be managed efficiently by the simple user functionality and automatic interfaces. Bison is a general contractor and covers all the processes of a modern retailer using integrated solutions, from the central ERP system to branch management to POS systems and digital signage.

TOPICS OF INTEREST

- e-Paper integration options (e.g. Electronic Shelf Labeling)

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- For students: Diploma/bachelor theses in the fields of IT, software development and marketing
- For graduates: Consultants, software developers, project managers and sales representatives
- For further information please visit www.bison-group.com
cronos is a recognized SAP partner, has long standing partnerships with universities and a combined experience of over 1000 customer projects. Drawing from this experience and based on the latest technological trends, like Blockchain, SAP S/4HANA, Robotic Process Automation, Process Mining and Machine Learning, we are able to develop innovative and approved solutions for the utilities industry.

We make an active contribution to the success of the energy transition in Germany, Austria and Switzerland. With over 300 permanent consultants in 5 locations, we are the biggest independent SAP consulting firm for the utilities industry in GSA. Our success is the result of a well-balanced team formation bringing together young and experienced IT specialists, who are among the most sought-after consultants in the industry.

Facts
- market leader as biggest independent IT consultancy for the utility sector
- 300+ consultants
- 200+ active customers
- 1,000+ successful projects
- 25+ years of experience
- SAP Gold Partner, UiPath Gold Partner, Celonis Gold Partner

We maintain a strong academic network and offer attractive programs for students and graduates. Our regular workshops, graduate programs and extensive onboarding system jumpstart a career in IT development and consulting.

We are looking for talents

TOPICS OF INTEREST
- software engineering
- project management
- process automation
- portals
- apps
- SAP HANA
- CRM
- SAP Customer Experience
- analytics
- online marketing
- HTML5, JAVA
- SAP Cloud Platform
- SAP Fiori
- Machine Learning
- strategy consulting
- AI
- SAP UI5
- Process Mining
- Robotics – RPA

Job opportunities

To think outside the box is more important than ever, especially in IT. Driven by innovation and creative young people, digitalization accelerates the development of new technologies and new challenges. Granting young professionals the freedom to explore ideas and to assume more responsibilities is part of our credo.

Senior IT consultant
Junior RPA developer
Junior app developer
Junior cloud developer
Junior ERP consultant
Working Student

Find out more about our student and graduate programs:

www.cronos.de/campus
www.cronos.de/cronologewerden

ABOUT THE COMPANY

With a pioneer spirit and start-up attitude cronos was founded in 1991 in Münster, Germany. Our core area of consulting is IT and process optimization for utility companies. We support our customers in the process of digitalization and the development of new business fields.

cronos is a recognized SAP partner, has long standing partnerships with universities and a combined experience of over 1000 customer projects. Drawing from this experience and based on the latest technological trends, like Blockchain, SAP S/4HANA, Robotic Process Automation, Process Mining and Machine Learning, we are able to develop innovative and approved solutions for the utilities industry.

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ABOUT THE COMPANY

DMI takes responsibility for the digital archiving of patient records and provision in client software systems. Since 1966, the specialised service provider has been providing hospitals with continuous support in the optimisation of information-based processes and with fully compliant archiving throughout constant changes in technology and framework conditions. In production centres and at clients’ locations, DMI staff digitise, qualify, integrate and archive every second patient record for in-patients based on certified information security and data protection guidelines and ensure seamless integration into health IT systems. Through its interface expertise with all data management HIS architectures, DMI enables the consolidation of digitised paper-based patient records with electronic documents and data, as well as medical image documentation, in audit-proof long-term archives. Interoperability (the ability of systems to interact with one another), including on a data level, is the basis for the integration and sustainability of our solutions. DMI provides its clients with lean, secure, efficient processes through consolidated patient records.

Our relationships with our clients are shaped by commitment, respect and fairness. The quality of our service business is based on the professional and social skills of our employees.

Topics of interest
- Consolidating medical records including electronic and digitized documents
- Interoperable IT architectures based on current standards
- Audit-proof digital archiving for compliance
- Deep integration of archived documents into administrative and clinical workflows for enabling effective clinical processes for best patient outcomes
- The link between medical informatics and medical research as well as routine practice in healthcare

DMI as an employer

DMI is not your typical medium-sized company: it is an owner-managed organization of roughly 1,000 highly motivated staff and a flat hierarchy. Its approach is long-term and sustainable, with continuing education of employees as a key ingredient. With a focus on the German healthcare market and additional activities in banking, insurance, general business, and the public domain, DMI offers high-value services:

- digitization, qualification, consolidation, presentation, and archiving of documents
- integration into information-based processes
- analysis of documentation process landscapes and support for optimization aiming at effectiveness and compliance.

Company headquarters are situated in the pulsating university city of Münster in North Rhine-Westphalia (NRW); service centers are located in the castle town of Leising near Leipzig (Saarland) and Essen (the “Green Capital”, NRW).

Job opportunities

Are you up to this challenge? DMI’s team members are committed to achieving results for customers in a dynamic ecosystem of evolving technologies and continuously changing customer demands. A multitude of benefits make DMI an attractive employer.

- Selected open positions in Germany for professionals: (senior) software developers for applications, information systems specialists, experts for IT infrastructures and networks.
- Selected open positions in Germany for students: thesis students (business administration) and graduates.
- Selected open positions in Europe for students: thesis students (business IT, information systems, IT, software development) for innovation in document archiving and archiving enabled by state-of-the-art IT and by digital transformation.

For more information, contact:
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Mobile +49 151 40778738
viola.henke@dmi.de
www.dmi.de
Hilti makes construction work simpler, faster and safer. At Hilti we create and design leading-edge technology, software and services, which power the professional construction industry. We’re global, based in over 125 countries with more than 29,000 employees. Everyday our technologies support awe-inspiring feats of engineering from around the world – from the famous bullet train in Japan to metro tunnels deep under the largest cities on earth. We offer a 360 degrees service for professionals on site – from software for design, products and tools for work onsite to training, repairs, testing and consultancy. We’re a one-stop shop for building, worldwide.

Our customers are at the heart of everything we do. That’s why we run our own direct sales teams, with over two-thirds of our Hilti team members working directly with our customers every day. That’s 250,000 interactions worldwide online, on the phone, in our stores and on site. And at Hilti we don’t believe in just sitting in the office. Our sales teams and field engineers work closely with our customers on site, finding solutions to make builds faster, easier and safer. All this drives our innovation, because we know and understand what our customers really need. And, Hilti is a great place for you to show your worth as you learn, grow and carve-out your career in Information Technology. We are a truly global team with highly competent teams who work very closely together. Hilti’s Global IT team is known for their focus on sustainable value creation by translating latest IT innovations into value creating solutions and services. We’re a powerhouse and reference customer for SAP, driving digital transformation as the world’s first multinational company that successfully implemented S/4HANA to the entire organization. We’re also an industry leader in cloud computing – both as a consumer of public cloud services and as a provider of cloud services to our customers.

So, have a career with the best! Become a valuable member in a highly professional and international team of IT experts and meet the challenges of a global multinational company using latest technologies.

topics of interest
- Product IT & IoT
- Supply Chain Management & Industry 4.0
- Digital Marketing & Sales
- Business Process Management & Business Excellence
- Data Analytics & Information Management
- IT Security & Governance
- Smart Workplace & Client Technology
- Enterprise Computing, Cloud Deployment & Enterprise Architecture

engagement options for students and trainees
- Internships: A working head start while the students are still at university; a combination with thesis research is possible (3-12 months)
- Hilti IT Fellowship: Study a semester abroad at the University of Liechtenstein and work in an international project team in Hilti (5 months)
- Hilti IT Management Program for Graduates: Trainees work closely with senior management to unleash their leadership potential from day one (12 months)

Applications through careers.hilti.com

job opportunities for graduates
- IT Process Consultants
- IT Project Managers
- Data Scientists and Business Analysts
- IT System Engineers and Solution Architects

Find more open positions on https://careers.hilti.com/en/ll/corporate-it or get in touch with us directly.

Advisory Board

Informationsfabrik

Our mission: raise data treasures!

We develop data-as-a-service solutions and drive companies forward.

About the company

Where quick reactions to ever changing business requirements are of paramount importance and subsequent decisions have a wide impact, we provide the pertinent facts. Informationsfabrik consultants are experts in the areas of Next Generation BI, Big Data and Artificial Intelligence. Our focus lies on the financial and insurance service industry, the banking and industry sector.

We produce information

Decision making in companies is based on the evaluation and analysis of information. Be it for intelligent marketing, for improved customer communications and recommender systems, or for determining churn probabilities: Accurate information to act upon has become a major asset for any business process. With methods provided by Data Analytics and Artificial Intelligence, a whole lot of new possibilities to extract and condense information from data came into existence.

We support our customers in several analytics subject areas. Our team shares the aspiration to deliver information in the correct format to the right person at the right time using modern technologies and our innovative approaches.

Visual Analytics promises a fast and effective way to get a thorough understanding of business data. No means are better suited to give meaning to data than a visual form of representation. We support our customers by creating diagrams and conveying the required knowledge. In fact, we also empower our clients to conduct ad-hoc analysis and reports by providing an environment in the sense of BI Self-Service which can be used by power-user or business users without IT assistance. Eventually this leads to faster and more accurate decision-making. Of course, we will make sure that any data governance and legal obligations are met.

We design and implement BI, DWH and Big Data solutions. In a Data Warehouse data from different source systems and of varying formats is consolidated, stored for data analysis and ultimately used to support business decisions.

We collaborate closely with our customers and help to expand their knowledge with individual trainings and valuable coaching.

Since our foundation in 2000, we managed to become renowned business analytics experts. To give our clients certainty in a couple of mouse clicks is the goal we have devoted ourselves to.

Another important subject area is Big Data. In recent years the amount of semi- or unstructured data sources has massively increased. At the same time the challenge of realizing storage, information extraction, and information integration for analysis rises. We support our customers to cope with the difficulty of complex Big Data solutions.

Last, but not least we employ Data Science and Predictive Analytics methods to create new possibilities for extracting knowledge from our client’s data. We offer guidance on planning and executing Data Science projects. Following our self-developed approach, shaped by the experience from hundreds of projects, we handle vast amounts of data and deliver high quality information and predictions.

We are experts in the areas of Next Generation BI, Big Data and Artificial Intelligence. Our focus lies on the financial and insurance service industry, the banking and industry sector.

Our highly qualified staff has acquired profound knowledge for conception and design of such solutions and are familiar with new modelling and architecture paradigms.
IQ-OPTIMIZE
Software development, operation and maintenance of IT services. Since 1996 IQ-optimize develops customized applications and advanced software products. The IQ-optimize Software AG is a subsidiary of 1&1 Drillisch AG. 1&1 Drillisch AG is a listed public limited company and offers tele-communications services. The portfolio of the IQ-optimize Software AG is broad. The priorities are customer oriented and serve all needs of customers.

Main competences of IQ-optimize
Software AG are:
- Software development, operation and maintenance of workflow and document management systems for business processes automation, billing and mediation, ERP and retail for web shops, stores and indirect sales including sales of subsidi- zed goods.
- Media design for trendsetting websites.
- Implementation, hosting and operati- on of customized IT infrastructures and cloud solutions including service management, maintenance, security and monitoring.
- IQ Optimize is Advisory Board Member since 2004.

RESEARCH TOPICS
Optimization, Innovation, Omnichannel, Telecommunication, Workflow Management, CRM, Web Sales, Retail, Business Intelligence, Service Management and Security, Hosting and Cloud Solution

JOB OPPORTUNITIES
We are offering various job opportunities within our Software Development, Billing, Operation, Business Intelligence, Media Design and Project Management Units. Addi- tionally to these areas we are offering job opportunities within our Cloud Technology area based on OpenStack. Please refer to https://www.iq-optimize.de/job for further details.

http://www.iq-optimize.de

SAP
We help the world run better and improve people’s lives.
As the cloud company powered by SAP HANA®, SAP is market leader in enterprise application software, helping companies of all sizes and industries run better. From back office to board-room, warehouse to storefront, desktop or mobile device to the cloud – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable more than 335,000 customers to operate profitably, adapt continuously, and grow sustainably. SAP helps simplify technology for companies of all sizes so they can consume our software the way they want – and without disruption. With an extensive global network of customers, partners, employees, and thought leaders around the world, SAP helps the world run better and improve people’s lives.

For more information, visit:
www.sap.com

Bring everything you are. Become everything you want. Find yourself working at SAP:
sap.com/careers

ABOUT THE COMPANY
The retail company Lidl is one of the lead- ing companies in the food retail sector in Germany and Europe. We place value on an optimal price-performance ratio for our customers. At Lidl, we are convinced of our business model “best quality at the best possible price” – in a pleasant shopping environment. We are a retail chain with a systematic store concept. Simplicity and process orientation determine the daily ac- tivities in the stores, the regional distribu- tion centers and the national subsidiaries. Lidl is represented in 30 countries world- wide – in Europe, USA and Hong Kong. Lidl operates some 10,500 stores, more than 150 distribution centers in currently 28 countries and has some 260,000 employ- ees. Dynamism in daily implementation, performance in the results and fairness in dealing with one another characterize working at Lidl across the globe. The head- quarter of the company is still based in Neckarsulm. In the 2017 financial year, Lidl generated revenues of 24.6 billion Euros.

Our guiding principle: “If you stop getting better, you stop being good!” Our corpo- rate culture comprises the willingness to develop ourselves further, adapt to new circumstances and continually improve ourselves. We go about this in a dynamic and team-oriented way. Our willingness to do things differently or to adapt existing concepts is what makes us successful.

Efficient processes form the basis for a successful business model that offers cus- tomers in Europe the best product quality at the best price. A powerful IT system and application landscape makes up a signifi- cant portion of constant process optimiza- tion. Lidl – in addition to its production companies, GreenCycle and Kauffund – is part of the Schwarz Group. In turn, Schwarz IT is the central IT technology partner and service provider for the entire Schwarz Group, and is responsible for the selec- tion and provision of IT infrastructure, IT platforms and business applications. By continuously taking current technologi- cal developments into account, Schwarz IT identifies innovative courses of action and, in close cooperation with the depart- ments, also develops professional, effi- cient IT solutions. In summary, Schwarz IT is responsible for IT at more than 12,000 locations throughout the Schwarz Group in over 30 countries and is well on course to implementing Trade 4.0. The high-per- forming, motivated and entrepreneurially thinking IT team safeguards its success by means of close collaboration along with intensive and fair interconnectivity and cooperation with the world’s leading soft- ware- and technology companies such as SAP, Intel, Apple, Microsoft, GK Software, Teradata, MicroStrategy and implementa- tion partners such as KPS, Software AG, Ernst & Young, PricewaterhouseCoopers and MGM. This is supplemented by pro- jects with research institutes at renowned universities.

TOPICS OF INTEREST
- Digital Transformation and Innovations
- Business Transformation, Cloud, Informat- ica, Master Data Management, SAP HANA, Big Data, Business Intelligence & Analytics, SAP Retail/EWM/CCAR, Salesforce, CRM, SuccessFactors, GK Software, Hybrid Solu- tion Development, Design Thinking, Cons- versational Commerce (Chatbot, Voicebot), Artificial Intelligence, Google

JOB OPPORTUNITIES
In a wide range of exciting tasks and global projects, employees work in a dedicated, independent and cheerful way towards providing optimal support for the business of Europe’s largest retail company with re- spect to assisting global business process- es, and designing, developing and rolling out systems. Further, they ensure a highly available IT system and application land- scape as well as ultra-modern high-end technologies. Goals: Using one IT platform and system landscape to reduce the com- plexity of applications in an agile way and to place emphasis on the user’s benefits.

Become part of Schwarz IT, the powerful technology partner of Schwarz Group. We are looking for go-getters, who will help us to safeguard the digital heartbeat of all of our production companies, GreenCycle, Lidl and Kauffund: efficiently, quickly, and flexibly. We offer a variety of opportunities from internships to permanent positions.

Schwarz IT. More IT than you might think! Find out about our attractive job offers at: jobs.lidl.de
The following illustration furnishes a brief overview about the Picture method:

- **Self-Explanatory**: Simplified process modelling due to easy-to-use intuitive components.
- **Standardized Process Description**: Increased comparability and analysability due to a formal and contextual standardisation of the description level.
- **Instruction and Integration of Employees**: Due to its simplicity, it enables employees to adopt this model quickly and fosters staff acceptance.
- **Flexibility in Process Description**: The Picture method can be personalised according to the individual requirements of organisations.
- **Efficient Process Modelling and Activity Analysis**: The 24 building blocks enable to filter essential information for further analysis.

**THE PICTURE METHOD – EASY. EFFECTIVE. EFFICIENT.**

On the basis of 24 building blocks the Picture method provides the opportunity of process controlling by gathering and illustrating process data in a plain and transparent manner.

This method of process modelling lays the foundation for an extensive business assessment, as it offers a target-oriented and efficient way to analyse the coherencies of a company’s organisational structure and business procedures.

Visit our website www.picture-gmbh.de

**JOB OPPORTUNITIES**

Job Opportunities at the PICTURE GmbH:

- (Junior) Sales Consultant (f / m)
- (Junior) Consultant
- (Senior) Consultant
- Software Developer
- Student Assistant (f / m)

**TOPICS OF INTEREST**

- Process management and optimisation
- Quality Management and Risk Management
- Organizational review
- Knowledge Management
- Task and Product Review
- Software implementation
- Process Benchmarking
- Change Management
- Process-oriented Budget Consolidation
- Implementation of Document Management Systems Reorganisation
- Studies Interface Analyses
- Implementation of Software

**ABOUT THE COMPANY**

viadee Unternehmensberatung AG is a German IT-Company with more than 150 tech-interested employees. Our company culture is dedicated to caring for each one individually, maximizing our potential. Applying this principle, we have come a long way since 1994 to offer great individual solutions to our customers.

viadee currently has an office in Münster, as well as an office in Cologne. Both are located in the state of North-Rhine Westphalia, allowing us to focus a regional customer base. Projects are seldom far away from our employee’s home location, which proudly makes us say that most of our consultants have the chance to sleep at home.

The industry sectors, in which our consultants are active, include banking, electric power industry, trade, IT and service companies, logistics, public service, telecommunications, insurers, logistics and supply plants.

**TOPICS OF INTEREST**

- Business Intelligence
- Software Architecture
- Business Intelligence

**AT VIADEE, YOU ARE IN THE RIGHT PLACE**

Bringing BPMN (business process model notation) models to life is currently one of our core activities. Prominent mention should be given to our process warehouse, as well as our confluence BPM-Modeler. This happens often in agile projects leveraging other Java-based technologies, be newest technologies with Spring Boot, or established practices like WSDL and Soap. Java and SAP have accompanied us through almost all of our company history and with most customers. However, we take an undogmatic view on technologies and methods and use whatever is appropriate. To keep up with the scientific discussion we enjoy cooperation, both with ERCIS, and other research institutions.

Test automation is great to ensure software quality. We feel it is even greater with software developed here called vTF, the viadee test framework. An opportunity to create cross-platform integration tests, be it web-based, or on the level of an operating system.

Areas of expertise and consulting products, such as these, are invented and supported like internal startups. Employees have the opportunity to contribute their topics of interest as part of our research and development activities. Right now, this is happening with explainable artificial intelligence (AI), IT-Security, Cloud Architecture, and several other topics.
The Westfalen Group is an energy sector technology company operating with a total of 23 subsidiaries and associates in Germany, Belgium, France, the Netherlands, Austria, Poland, Switzerland and the Czech Republic. The family business, founded in 1923, has over 20 production sites located across Europe and is headquartered in Münster. Its business sectors are gases, energy supply and service stations. With about 1,700 employees, the Westfalen Group posted sales of around 1.9 billion euros in the 2018 financial year.

Gases
The Westfalen Group produces and distributes approximately 300 technical gases and gas mixtures for almost every application in industry and trade, food production, laboratories, pharmaceuticals, medicine and homecare. These gases include nitrogen, oxygen and argon, which are generated in three dedicated air separation plants, as well as acetylene and hydrogen. Refrigerants and heat transfer fluids for refrigeration and air-conditioning technology round out the diverse portfolio.

Energy Supply
Under its Westfalenagas brand, the Westfalen Group produces and distributes approximately 300 technical gases and gas mixtures for almost every application in industry and trade, food production, laboratories, pharmaceuticals, medicine and homecare. These gases include nitrogen, oxygen and argon, which are generated in three dedicated air separation plants, as well as acetylene and hydrogen. Refrigerants and heat transfer fluids for refrigeration and air-conditioning technology round out the diverse portfolio.

A family owned company
The Fritsch-Albert family ensures continuity of the family company. Since July 2018, Wolfgang Fritsch-Albert has been Chairman of the Supervisory Board at the Westfalen Group. Prior to this, he led the company as CEO from 1977 to 2018. Renate Fritsch-Albert joined the Supervisory Board in April 2017. She was previously a member of the Executive Board.

Health & social responsibility
Satisfied employees who receive continuous further training are the key to success. This is why the Westfalen Group offers a wide range of services and packages for health management, talent management and company sports. Support services for childcare as well as bicycle leasing by JobRad are also included in the range of services.

A tradition of charitable commitment
For many years, the Westfalen Group has been committed to the “Mitmachhändchen” foundation, which supports children from low-income families. Westfalen also supports Sternenland e.V. as a centre for grieving children, teenagers and their families and inclusion projects run by Funky e.V.

Committed by conviction
The Westfalen Group is particularly committed to the region and focuses on sustainable development. As an active member of the Industry Acceptance Campaign Industrie, the company highlights the importance of industry as an attractive employer, trainer and driver of progress.

Climate protection with hydrogen
The Westfalen Group supports regional and nationwide environmental protection initiatives. In 2018, for example, it entered into a cooperation with Stadtteilauto CarSharingGmbH. Both companies offer an emission-free hydrogen vehicle to rent.

The company is also demonstrating its commitment to mobility of the future in its own vehicle pool. With the Mercedes GLC F-Cell, employees can drive to meetings powered by environmentally-friendly hydrogen.

Both vehicles are refuelled at Westfalen’s Münster-Amelsbüren hydrogen service station, located in the Hansa Business Park just off the A1.

Systematic energy and environmental management
The Westfalen Group has, for many years, continued to pursue a rigorous energy and environmental management system. In 2018 the effectiveness of this system was proven once again by the company’s successful certification to internationally recognized standards DIN EN ISO 14001 (Environmental Management Systems) and DIN EN ISO 50001 (Energy Management Systems). In addition, more than 700,000 kilowatt hours of electricity have been saved over the past three years.

TOPICS OF INTEREST
• Industry 4.0
• IoT in Logistics
• Data Analytics and Machine Learning
• Mobile Solutions
• Business Process Excellence
• Digital business models

The Westfalen Group brings movement, heat, mobility and safety to life, industry and economy with a wide range of products and solutions for supplying energy. In order not only to meet the demands of customers, but even to exceed them, new digital methods are increasingly required to pave the way for achieving this goal.

In a highly competitive market, it is essential to constantly monitor, evaluate and, in any case, harness the latest trends.

With an open attitude towards new technology, the company is trying to improve steadily and to follow unconventional paths. In the second half of 2019, so-called "Headventures" took place internally. Here, interdisciplinary teams have tackled the most varied challenges and pitched their innovative future solutions in front of a jury.

JOB OPPORTUNITIES
The focus of success is on people – that’s why the Westfalen Group is always on the lookout for talents who bring new ideas and energy into the team. There are many doors open in the company: for pupils, students, career starters or professionals. The most up-to-date job offers are available on the Westfalen website: https://westfalen.com/de/de/karriere/

Should not be the right job, it is always worth unsolicited applications.
and a strong bias towards action. There is an obvious market development. Leading tech experts didn’t fit into traditional company structures. They run on data analytics products to SMEs that often lack the capabilities, resources and tech expertise. We therefore offer various enterprise solutions.

Our products combine state of the art algorithms in the background with a user-friendly interface that requires no data science experience. Besides our self-service products we also offer various enterprise solutions.

If companies strive for the merits they need to trust in these rule-breaking data-driven developments. The logic consequence is that they must trust in tech start-ups and must cooperate to get access to those accelerating tech insights. In order to fully unfold a new era of data-driven business models, companies will have to participate in this obvious market development.

Tech start-ups arise because the spirit of the leading tech experts didn’t fit into traditional company structures. They run on their own mantra: faster, no fear of failing and a strong bias towards action. There is no other place where prototyping, spirits and iterations are as normal as in tech startups like the Westphalia DataLab.

We believe that together, traditional companies and tech start-ups, combine a tremendous business power and make an unbeatable team, if they collaborate on eye level. At the Westphalia DataLab we rely on over 25 years of experience in advanced statistics, a team of 50+ experienced data professionals and a strong collaboration with academia.

Our team of data scientists has carried out numerous projects and supported companies from various industries in exploiting their hidden potentials by using company data as well as terabyte of external data. Our standardized products and our expertise in artificial intelligence enable us to generate added value.

Paired with the strength and trustworthiness of our joint-venture partner FIEGE, pioneer of contract logistics and in existence for 145 years, we empower our customers to exploit their full data potential — 10 times faster and 10 times less expensive.

Facts
- 50+ Data Scientists
- 35+ Clients
- 130+ Projects

Topics of Interest
- Product Development
- Data Analytics as a Service
- Predictive Analytics
- Machine Learning
- Artificial Intelligence
- Automated Analytics
- Big Data

Job Opportunities
Fancy some Data? Then join us and become part of our rapidly growing start-up. Use the unique opportunity to actively participate in the design and development of a young company and new products.

- Data Scientist
- Data Scientist (Internship)
- Data Engineer
- Data Engineer (Internship)
- Web Developer
- Web Developer (Internship)
- Product Manager

For further information please visit our website: www.westphalia-datalab.com

Company Profile — About the Company
zeb is the number one strategy and management consultancy for financial services in Europe. With more than 1,000 employees, we develop sustainable strategies and implement them together with our clients - banks, savings banks, insurance companies and other financial institutions — along the entire value chain. Be it in Munich, Milan or Moscow - we, the management consultancy zeb, use the same language all over the world: straight talk. An honest working environment, reliable statements and open communication are part of our corporate culture and form the basis that enables us to achieve long-term success — for us and our clients.

Products and Services — Topics of Interest
As a partner for change, it is our aim to improve the performance and competitive strength of our clients. The success of our consulting services is based on well-founded methodology, combined with in-depth expertise and excellent knowledge of the sector. The focus of our work lies in strategy & organization, finance & risk and IT. We intend to continue our growth path in the future. Our thematic growth focus is on management and IT consulting.

Additional Information — About the Company
Collaborative
What you can expect at one of the most successful management consultancies in the demanding financial services market? Respect, trust, team spirit and a down-to-earth attitude. Because at zeb, we firmly believe that only a culture of collaborating as partners can ensure our success and the success of our clients in the long run. Therefore, flat hierarchies and communication at eye level are very important to us — amongst colleagues, but also in the interaction with our clients.

Diversity
For us, all employees are equal — in terms of opportunities and career development. When it comes to national origin, gender, skin color or sexual orientation, however, we welcome diversity, because at zeb, we care for an open culture where employees are treated solely according to their professional strength of our clients. The success of our consulting services is based on well-founded methodology, combined with in-depth expertise and excellent knowledge of the sector. The focus of our work lies in strategy & organization, finance & risk and IT. We intend to continue our growth path in the future. Our thematic growth focus is on management and IT consulting.

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Job Opportunities
Required specializations: business administration, economics, (business) informatics, (business) mathematics, applied physics

Possibilities to join the company:
- Internship
- Student assistant
- Theses and dissertations
- zeb.bachelor.welcome
- Direct start

www.zeb.eu/career

www.zeb.de/karriere
OUTLOOK FOR 2020

FEBRUARY 2020

PHD SKI SEMINAR, 10–15 February, Flumserberg, Switzerland

START HILTI FELLOWSHIP PROGRAM (SUMMER TERM 2020), www.uni.li/hilti-fellowship

MARCH 2020


DAGSTUHL SEMINAR ON CITIES 5.0, 24–6 March, Schloss Dagstuhl, Germany, https://www.dagstuhl.de/de/program/kalender/evhp/?semnr=20014

APRIL 2020

MISDOM – MULTIDISCIPLINARY INTERNATIONAL SYMPOSIUM ON DISINFORMATION IN ONLINE MEDIA, 20–22 April, Leiden, The Netherlands

MAY 2020


JUNE 2020

33RD BLED ECONOMY, 28 June–1 July, Bled, Slovenia, http://BledConference.org

DESIRIST 2020 – 15TH INTERNATIONAL CONFERENCE ON DESIGN SCIENCE RESEARCH IN INFORMATION SYSTEMS AND TECHNOLOGY, 9–11 June, University of Agder, Kristiansand, Norway

JULY 2020


22ND INTERNATIONAL CONFERENCE ON HUMAN-COMPUTER INTERACTION, SESSION ON “DATA, ALGORITHMS, AND HUMANS IN DIGITAL MANIPULATION”, 14–20 July, Copenhagen, Denmark, http://2020.bciinternational

SEPTEMBER 2020


11TH ERCIS ANNUAL WORKSHOP, 21–23 September, Wroclaw, Poland, https://www.ercis.org/events/annual-workshop

15TH EUROSYMPOSIUM CONFERENCE, eurosymposium.eu

16TH INTERNATIONAL CONFERENCE ON PARALLEL PROBLEM SOLVING IN NATURE (PPSN), 5–9 September, Leiden, The Netherlands, https://ppsn2020.iiacs.leidenuniv.nl


OCTOBER 2020


ICIST 2020 – 26TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES, 15–17 October, Kaunas, Lithuania, https://icist.ktu.edu/

For everything that concerns the ERCIS network simply write us an email. You will for sure get an answer from one of our team members. The team consists of Dr. Armin Stein, who is the managing director of the ERCIS network and is being supported by Dr. Katrin Bergener, who works part-time for the team and furthermore as Coordinator for the WWU Centre for Europe, and Miriam Epke.

Besides answering emails, the team helps organising events, maintains the website, organises the network communication, and supports project applications.

If you are interested in the network, get in touch with them!

info@ercis.org
THE IS RESEARCH NETWORK – LET’S STAY IN TOUCH