ERCIS is about to celebrate its 20th birthday and we have already set the course for the next 20 successful years of ERCIS. As you may have already noticed, this is the first annual report in which two authors write the foreword together. For both of us, Jörg and Jan, it is a distinct pleasure to work together even more closely in the future and, alongside all our partners, propel ERCIS to the next level.

The response was overwhelmingly positive when, overnight, several thousand colleagues congratulated Jan vom Brocke on social media for his return to the University of Münster and his new role at the ERCIS headquarters. As a Münster alumnus, Jan has been with ERCIS since its establishment in May 2004, and he has played a pivotal role in establishing the ERCIS location in Liechtenstein over the past 15 years. Together, we will ensure continuity and introduce a wealth of new ideas and initiatives to ERCIS.

In this current Annual Report, we look back on the many outstanding activities of the past year while also offering a glimpse into the future.

We had great meetings of ERCIS partners at many conferences, most notably the ECIS conference in Krakow, where some of the cornerstones for the future strategic direction of ERCIS have been laid. At the ERCIS Winter School on Business Process Management, which took place at the University of Liechtenstein, we are grateful for the strong support from our team at the University of Seville and from the numerous individual members who participated in the Winter School and made significant contributions. We have a great visit to the Hiti Headquarters and had a deep dive into the topic of process science, interacted with practitioners and enjoyed the beautiful nature of Liechtenstein during our traditional fondu trip and sleigh ride. We are excited by the prospect of creating clusters that span countries and sectors, serving both businesses and societies across Europe. We are particularly enthusiastic about the European idea and the shared vision that together we can do things, no single university could.

Life is better together!

We extend our heartfelt gratitude to all members for their unwavering commitment and high motivation in building ERCIS together. We value not only their professional expertise and excellence but also their collegiality, friendship, and shared enthusiasm for our work. We would especially like to thank our coordination team, Amin Stein – our highly valued Managing Director – as well as Katrin Bergner and Julia Seither together with many assistants, who make the ERCIS possible after all.

We invite you to enjoy this report, which may serve as inspiration for numerous joint activities in the years to come.
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After five years of planning, the much-anticipated 2023 ERCIS Annual Workshop finally unfolded in Wrocław, Poland, graciously hosted by the Wrocław University of Science and Technology (WUST) in collaboration with our esteemed partners Dariusz Król and Ngoc Thanh Nguyen. Welcoming 41 participants from around the globe, this year’s workshop returned to its traditional three-day format, commencing with a captivating welcome reception on the first day that immersed us in the world of Flamenco Fusion through an exceptional live performance.

The workshop’s second day commenced with an introduction to the Information Systems Research groups at WUST, followed by a comprehensive overview of the activities conducted throughout 2023. As we gradually return to pre-COVID research dynamics, the emerging topics unveiled new avenues for collaborative European-level research.

Jan, in a visionary address, outlined the network’s future, emphasizing the desire to fortify connections with industry partners and suggesting a theme for the upcoming years: “Life is better together.”

The afternoon featured a stimulating World Café session, dividing participants into thematic groups—Research, Education, Practice Collaboration, and Network Organization. The Research group deliberated on strengthening ties among network members, facilitating the expansion of local and national activities to international partners, and emphasized the crucial support and integration of early-stage researchers. In the Education domain, participants underscored the significance of leveraging ERASMUS+ and enhancing cooperation between individual researchers. Notably, there was a strong interest in facilitating joint Master Theses without administrative complexity. For Practice Collaboration, plans included establishing joint innovation labs and creating a unified research interface for companies operating globally. The use of students as a catalyst for collaboration with companies, yielding innovative ideas and solutions, formed a central theme. Lastly, the Network Organization groups explored governance changes to foster inclusivity among members, such as supplementing the Board of Directors with international partners.

The day concluded with presentations on funding opportunities by the European Commission, offering potential applicability to ideas generated during the World Café. The enchanting workshop dinner, featuring live music by a Ukrainian pianist, provided an ideal setting for initial discussions on operationalizing these innovative ideas.

The third day began with individual presentations on ongoing research activities, providing an insightful glimpse into the planned activities for 2024. We were delighted to receive an invitation from Alessio Maria Braccini of the University of Tuscia, Italy, to convene in Viterbo for the 2024 Annual Workshop.
The ERCIS Network represents a dynamic community comprising researchers and practitioners who, in addition to their individual contributions at their respective institutions, foster a spirit of collaboration.

In this section, we present an overview of the ongoing initiatives within the network, highlighting key accomplishments from the past year.
In February 2023, the AI-bility project team involving ERCIS partners from the University of Münster (Germany), the University of Liechtenstein (Liechtenstein), and Grenoble Ecole de Management (France) conducted their major field experimentation in Innsbruck (Austria). Their aim was to investigate the learning behaviors and outcomes of 50 learners aged 11–13 when using conversational AI technology, such as a chatbot, voice assistant, or social robot.

The COVID-19 pandemic has accelerated the use of conversational AI among teenagers for educational activities such as solving math problems or language learning. The study focused on whether the utilization of such advanced conversational AI could enhance knowledge retention of micro-learning tasks. Such an investigation is particularly interesting as it is uncertain whether learners are able to retain the knowledge acquired from these conversational AI systems. The results of this study will be made available through publications in academic journals and on the project’s website.

https://ai-bility.eu/

EDUCATIONAL STORIES ON CONVERSATIONAL AGENTS FOR CHILDREN (AI-BILITY PROJECT)

How can I explain conversational AI to my six-year-old daughter? What is a prompt, and how can I encourage my son to think critically about robots? These are common questions that parents and teachers often have on their minds. To address these questions, the AI-bility project team, which includes partners from the ERCIS network at the University of Münster (Germany), the University of Liechtenstein (Liechtenstein), and Grenoble Ecole de Management (France), has taken the initiative to assist parents and educators in having meaningful conversations with children about these topics.

The project partners have embraced the concept of storytelling and have developed seven educational stories covering various aspects of conversational AI. These stories are available in both English and German and can be accessed on the project’s website.

https://ai-bility.eu/stories/
Setting the course together for a responsible digital future: The increasing spread of digital technologies has improved our lives in many ways, but the tremendous impact of these technologies also comes with great responsibility. At the 18th International Conference on Wirtschaftsinformatik (Wi23) in September 2023, 556 experts discussed how we can shape digital transformation responsibly. The WI is the premier IS conference in the German-speaking region.

Digital Responsibility guides the design and use of information systems in line with the legal minimum. We performed a Delphi study to identify the properties and implications of implementing this idea. In his keynote speech, Michael Rosemann (QUT) proposed “learning from the future” to develop responsible innovations. Matthias Voigt (Westfalen AG) presented first-hand experience on a CIO panel. We hosted the first on-premise WI conference past COVID-19 and conducted extensive social activities to re-ignite our community.

The Department of Information Systems at Paderborn University hosted Wi23. Many ERCIS colleagues attended the conference and served as track chairs, associate editors, or reviewers. Christiane Lehrer (CBS), Daniel Beverungen, and Matthias Trier (Paderborn University) served as a program committee.

From 26th to 29th October 2022, the chair of Daniel Beverungen visited Paolo Spagnolletti and his colleagues at the Luiss Business School in Rome. At a research colloquium, we discussed our latest findings and research projects on digital platforms. We were particularly excited to discuss our latest insights on different platform types, using public data spaces, acquiring knowledge through data mining, or creating value in platform ecosystems. We learned a lot from this exchange and received helpful research feedback.

In addition, we presented and discussed the current research projects from either side, leading us to various funding formats as initial ideas for starting joint research projects. In the meantime, this exchange of ideas has led us to develop an application for an EU Doctoral Network on Digital Platforms. From a social point of view, everyone enjoyed the intensive professional exchange and the international perspective. As a post-COVID-19 activity, visiting Rome was also a highlight for team building and networking, which we consider essential for succeeding in research and teaching.
Exploring the complex role of workarounds constraints at work, cope with a perceived employees perform to resolve perceived and Organization Science, has just started bottom-up process innovation research project on with workarounds. Artificial process innovation, leaving their potential unexploited.

In our project ChangeWorkAROUND, which is funded by the German Federal Ministry of Education and Research (BMBF), we design new data-based methods for identifying and evaluating workarounds based on digital process data, methods for strategic contextualization and evaluation of agile process innovations as well as methods for change and culture management of the process organization. ERCIS Advisory Board member Viadee designs data-driven methods to identify, analyze, and assess workarounds in a structured manner and to use them to create agile process innovations.

With this project, we follow up on recent publications on the diffusion of workarounds in organizations, developing concrete methods and tools that companies can apply to innovate their processes in an agile approach.

Best Paper Award for Research on Deceptive AI Explanations

Johannes Schneider, Rene Abraham, Jan vom Brocke (University of Liechtenstein) and Christian Meske (Ruhr-Universität Bochum) have received the Best Paper Award for their article “Deceptive AI Explanations: Creation and Detection” at the 14th International Conference on Agents and Artificial Intelligence (ICAART). (CORE Ranking B).

Artificial intelligence (AI) comes with great potentials but can also pose significant risks. Automatically generated explanations for decisions can increase transparency and foster trust, especially for systems based on automated predictions by AI models. However, given, e.g., economic incentives to create dishonest AI, to what extent can we trust explanations? To address this issue, their work investigates how AI models (i.e., deep learning, and existing instruments to increase transparency regarding AI decisions) can be used to create and detect deceptive explanations.


15th International Conference on Computational Collective Intelligence (ICCCI 2023), 27–29 September 2023, Budapest, Hungary

Web and mobile systems, social networks and multi-agent systems often require these types of tools for determining coherent knowledge, resolving conflicts, and making group decisions.

The ICCCI conference series is an important meeting place and exchange of views on scientific research on computational methods of collective intelligence and their applications in areas such as group decision-making, consensus processing, knowledge integration, semantic networks, social networks, and multi-agent systems.

Plenary lectures were delivered by professors: Leo Chu Kiong from the University Malaya, A.E. Eiben from Vrije University Amsterdam, Aleksandrs Byrsiks from the University of Science and Technology in Kraków and Diego Paez-Granados from ETH Zürich. The ICCCI conference has been awarded category B in the CORE rankings in 2021.

15th edition of the ICCCI 2023 international scientific conference dedicated to collective computational intelligence was held on September 27–29. The event is co-organized by the Department of Applied Informatics at the Faculty of Information and Communication Technology together with the Hungarian Eötvös Loránd University (ELTE).

The program included 122 papers that were presented during the conference and published in two volumes of the prestigious Springer series Lecture Notes in Artificial Intelligence and Communications in Computer and Information Science.

Collective computational intelligence is most often perceived as a branch of artificial intelligence dealing with soft computing methods that enable group knowledge processing and group decision-making by autonomous individuals operating in distributed environments.
The inter-institutional PhD course on “Research Methods in Information Systems” is conducted across the University Alliance Ruhr, and in this case also between the ERCIS personal members Jens Pöppelbuss and Christian Meske from Ruhr University Bochum as well as Christian Janiesch from TU Dortmund. Further lecturers in this PhD course are Frederik Ahlemann, Simon Hensellek, Mario Nadj, Hannes Rothe, Reinhard Schütte and Manuel Wiesche.

Over a total of nine block sessions, the PhDs will gain a detailed overview of the breadth of research methods available in IS, including, for example, data and network analysis, grounded theory, literature review for theory development, qualitative comparative analysis, structural equation modeling, experimental studies and design science.

ERCIS @ EMO 2023

The 12th International Conference on Evolutionary Multi-Criterion Optimization (EMO) has been hosted in March 20–24, 2023 by our ERCIS Partners at Leiden University. The general chairs – Michael Emmerich, André Deutz, and Hao Wang – organized a delightful five-day event in the center of Leiden, The Netherlands. For the first time since its establishment, the conference offered five keynotes and five tutorials, with ERCIS members contributing to both categories. Heike Trautmann (formerly: University of Münster) held an inspiring keynote on “Data Science: Statistics, and Optimization“. Afterwards, a team of ERCIS members – Christian Grimme (University of Münster), Lennart Schäpermeier and Pascal Kerschke (TU Dresden), gave a joint tutorial on the emerging topic of “Continuous Multimodal Multi-Objective Optimization“. Finally, Lennart rounded out the ERCIS days at EMO by presenting a joint paper by all four previously mentioned researchers entitled “Peak-a-Boo! Generating Multi-Objective Multiple Peaks Benchmark Problems with Precise Pareto Sets“.
In January 2023, we organized our annual winter school – called the Ski Seminar – which already exists since the beginning of ERCIS. The seminar was a co-operation of the University of Koblenz and the ERCIS Headquarters. In the seminar, graduate and undergraduate students were presenting their results of seminars of different topics that were held during the winter term 2022/23 at the two universities. As a social event, we offered skiing in the Austrian Alps in the ski resort of Kleinwalsertal/Oberstdorf. This year’s seminar topics were “University-of-Things”, “Machine Learning & Predictive Process Monitoring”, “Machine Learning with Chemical Data”, and “Fairness & Discrimination”. The picture shows our location – a mountain chalet in the middle of the ski area.

In June 2023, top researchers from around the world traveled to Saarland for a five-day Dagstuhl Seminar on “Challenges in Benchmarking Optimization Heuristics”. Schloss Dagstuhl is internationally well-known for its top-notch, invitation-only seminars that typically address trending computer science topics. This particular seminar was jointly organized by Anne Auger (INRIA Saclay, France), Peter A.N. Bosman (CWI Amsterdam, Netherlands), L. Darrell Whitley (Colorado State University, USA), and ERCIS member Pascal Kerschke (TU Dresden). The list of participants also included the names of four members of the ERCIS partner Leiden University: Thomas Back, Mike Preuss, Diederick Vermetten, and Hao Wang. Despite the seminar’s full schedule, which was packed with inspiring talks and stimulating breakout sessions, the participants also enjoyed the time they had for socializing and networking – possibly leading to new joint projects.

In particular, Pascal Kerschke and Thomas Back were able to deepen some of these conversations as they met again at two subsequent Dagstuhl seminars on “Syn- ergizing Theory and Practice of Automated Algorithm Design for Optimization” (in August 2023).

In September, the first Zoom meeting (Niels Garmann-Johnsen – UiA, Stefano Za - Unich, Isabel Ramos – UMinho) was held to prepare the summer school aimed at master’s students and focused on the digital transformation of the wine industry. A draft program was developed and will be refined through contacts with industry companies to tailor the training to their needs. The first edition will take place in Portugal in 2024, promoted by the University of Minho. The second edition will be held in 2025 at the University of Pescara in Italy.

In early October, the opportunity arose to link this summer school to the implementation of the hackathon within the CoDeAI project, involving the participation of that project’s consortium in the initiative. Currently, this possibility is being incorporated into the initial plans. Below is the draft program for the summer school.
**Network Activities**

**Research Collaboration IE Business School – University “G. d’Annunzio” of Chieti-Pescara**

Prof. Alvaro Arenas from IE Business School continued research collaboration with Prof. Stefano Za from University “G. d’Annunzio” of Chieti-Pescara. Prof. Arenas visited University of Chieti-Pescara from May until July 2023, imparting a research seminar on information systems to students from the PhD in Accounting, Management and Business Economics. The main topic of the collaboration has been “bias in artificial intelligence”. As part of this collaboration, Marco Smacchia, PhD student from University of Chieti-Pescara, is visiting IE Business School from July until December 2023. Initial results of this collaboration include an article on bias in AI-based translator tools presented at IAIS 2023, the XX Conference of the Italian Chapter of AIS.

**CoDeAI project** –
https://codeai-project.eu/

CoDeAI aims at extending higher education institutions (HEIs) curricula by an AI capability perspective will help to bridge the innovation gap between higher education and businesses and foster collaboration between HEIs will equip universities with knowledge and important tools to design learning programs aimed to identify and teach skills directly relevant for the job market to their students. The project is coordinated by the University of Graz (Austria) and involves the participation of the University of Minho (Portugal) and the University of Muenster (Germany) as partners and members of the ERCIS.

**Rui José Visiting the University of Münster**

In January 2023, Rui José, an Associate Professor in the Department of Information Systems at the School of Engineering, University of Minho, conducted a research stay at the Department of Information Systems, University of Münster. Throughout his time in Münster, Rui delivered an insightful presentation at the ERCIS Lunchtime Seminar titled “New Innovation Paradigms for Networked Urban Ecosystems.”
One of the annual highlights for some members of the ERCIS network is the Genetic and Evolutionary Computation Conference (GECCO). This year, it was held in the beautiful city of Lisbon, Portugal, from July 15–19, 2023. ERCIS members, particularly researchers from Leiden University, University of Münster, and TU Dresden, actively contributed to the conference in various ways. On the first day of the conference, Mike Preuss (Leiden University) and Pascal Kerschke (TU Dresden) gave a joint tutorial on “Exploratory Landscape Analysis”. On Sunday, the two also co-organized a workshop on “Good Benchmarking Practices for Evolutionary Computation”, which was also supported by a member of another ERCIS partner, Thomas Back (Leiden University), who contributed an enlightening talk on “Reflections on Mixed-Integer Global Optimization”. Later in the week, Lennart Schäpermeier (TU Dresden) presented the joint work of him, his supervisor Pascal Kerschke, and Christian Grimme (University of Münster) on “Plotting Impossible? Surveying Visualization Methods for Continuous Multi-Objective Benchmark Problems”.

**ER CIS AS ROLE MODEL FOR THE PORTUGUESE INFORMATION SYSTEMS COMMUNITY**

Armin Stein, at the invitation of Isabel Ramos from the University of Minho, Portugal, attended the CAPSI2023 conference in Beja, Portugal. CAPSI2023 marks the 23rd Conference of the Portuguese Association for Information Systems. The aim of this meeting was to offer inspiration to the Portuguese Information Systems Community from an international network’s perspective and to share best practices for collaborating with industry. Armin provided an on-site introduction to the ERCIS network, followed by Jan’s virtual presentation of his vision. The presentation sparked engaging discussions, and we anticipate that it will yield tangible results in the coming years.
The "RISE_SMA" project (funded by the EU Horizon 2020 research and innovation program), coordinated by Stefan Stieglitz, aims at developing solutions for contemporary challenges in Social Media Analytics in the context of society and crisis communication. The international and interdisciplinary network involves partners from the University of Potsdam (Stefan Stieglitz), the University of Agder (Tim A. Majchrzak), the Queensland University of Technology (Karl Bruns, Jean Burgess), the University of Leiden (Michael Emmich, Suzan Verberne, Frank Tapes) and from the municipality of Kristiansand, Norway (Sigurd Pautsen). The COVID-19 pandemic posed a challenge for the project which thrives from sharing knowledge during research stays at the respective locations. At the same time, the pandemic illustrated the relevance of understanding social media analytics during crises as much used social media to share and receive information about the disease. With a special focus on investigating COVID-19 related misinformation on social media, an international focus group was initiated by Tim Majchrzak within the RISE_SMA network.

**Publications**


We were very excited that our workshop “Best Practices and Challenges in DSR Education” was accepted for the conference, and we had an inspiring exchange about experiences in teaching and participation in DSR courses with about 30 participants on site. In the interactive workshop, we worked in groups to identify best practices, challenges, and recommendations for successful DSR courses. Prof. Dr. Jan vom Brocke’s keynote on “A Proficiency Model for Design Science Research Education” concluded the workshop. If you are interested in participating or sharing your experiences in teaching DSR, please find more information about the project activities on our project website (https://dsr-academy.de/) and contact us.

**Publications**


https://aisel.aisnet.org/ecis2023_rpp/95
The workshop took place in Leiden, NL, September 25–29. The organizer team solely consisted of ERCIS partners, i.e. University of Münster (GE), University of Twente (NL), Leiden University (NL), Wroclaw University of Science and Technology (PL). It mainly addressed the following aspects:

How does sociopolitical polarization emerge on social networks? What are the factors contributing to (dis)information diffusion, hate speech, and the spread of radical content? Central to these urgent societal phenomena is a concept of social influence.

The workshop specifically aimed at building bridges between different research communities in terms of reaching a common understanding and multidisciplinary view on Social Influence Analysis, ranging from computer science, marketing, mathematics, information systems, to social and communication science. Highly recognized international experts gave keynote talks fostering interdisciplinary and fruitful discussions. State-of-the-art research in the participating disciplines was summarized and promising joint research as well as funding opportunities could be identified.

Data marketplaces have become popular in recent years, in particular for enterprises who want to enrich their own data with novel data from outside in order to improve their decision-making. A data marketplace is a platform that brings together data producers and data consumers; the platform itself provides the necessary infrastructure. Since producers want to maximize their revenue, while consumers want to minimize their spending, data pricing is among the central problems for a data marketplace. In this paper Denis Martins and Gottfried Vossen have investigated an approach in which the amount of data purchased is potentially minimized due to an indication of redundancy within the data or similarities between parts of the data. It is generally difficult for a buyer to decide whether all or just parts of the available data should be paid for. The approach described utilizes Self-Organizing Maps (SOM), an early form of unsupervised neural networks introduced by Kohonen for automatic data analysis and visualization. Its inspiration is derived from the structural behavior of the cerebral cortex, in which neurons located at specific regions form groups to react together to a particular type of stimuli, such as visual or auditory. The paper shows how the SOM concept can be used to support a purchase decision.
An S MART CITY LOGISTICS – Collaborative and shared organization of V itiREV – Innovons pour des territoires

1) This study aims to explore the interplay between community dynamics and knowledge production using the quantum computing research field as a case study. Quantum computing holds the promise of dramatically increasing computation speed and solving problems that are currently unsolvable in a short space of time. In this highly dynamic area of innovation, computer companies, research laboratories and governments are racing to develop the field.

Contact: Olivier Dupouet
olivier.dupouet@kedgebs.com

2) SMART CITY LOGISTICS – In partnership with group LA POSTE – Tomorrow’s urban logistics

Conception of new logistics decision-making tools for designing large-scale logistical organizations, inspired by hyperconnected scenarios, allowing to achieve ecological and operational efficiency in line with the service level expected in the future.

Contact: Olivier Labarthe
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3) VitiREV – Innovons pour des territoires VITicoles Respectueux de l’EnVironnement

The second stage of the project VitiREV (2023–2026) financed by the French government involves more than one hundred professional, institutional and academic partners, and focuses on the sustainability of wine sector (including logistics and wine tourism). The innovative approaches including virtual and augmented reality for wine tours, original NTIC social media interventions on our extensive research field. These submissions exemplify the commendable work carried out by students and faculty across participating institutions, instilling a sense of pride in the accomplishments of our network’s graduates.

SELECTED PUBLICATIONS:

2023 ERCIS MASTER THESIS AWARD:
ERIC AMANN, UNIVERSITY OF KOBLENZ

The committee’s laudation for the thesis is as follows: “The thesis adeptly addresses a highly relevant problem within the Information Systems discipline, specifically in the field of Business Process Management. The design-oriented research approach, coupled with meticulously applied requirements engineering methods, includes a comprehensive literature review and in-depth interviews. Furthermore, the implementation is not only clean and well-documented but also demonstrates a keen attention to detail. In summary, the thesis stands as an exemplary artifact of Information Systems research.”

The award showcased two other highly competitive runner-ups, leading to a robust discussion about the winner. The committee extends special mentions to both authors:

Thomas Balbach, KU Leuven, Belgium, for the thesis “Does Official Language Proficiency Lead to Bureaucratic Discrimination of Cross-Border Citizens? A Correspondence Experiment in Germany.”

Janina Lütke Stockdiek, University of Münster, Germany, for the thesis “Using Language Models for Benchmarking Manipulation Detection in Social Media.”

This year, the ERCIS network proudly presented the second ERCIS Master Thesis Award during the European Conference on Information Systems (ECIS) at our esteemed partner university in Kristiansand, Norway.

The committee acknowledges with emphasis that all the submissions were, once again, invaluable contributions to the body of knowledge within our Information Systems field, offering diverse perspectives on our extensive research field. These submissions exemplify the commendable work carried out by students and faculty across participating institutions, instilling a sense of pride in the accomplishments of our network’s graduates.

Ultimately, the committee decided to bestow the 2nd ERCIS Master Thesis Award upon Eric Amann of the University of Koblenz, Germany, for his outstanding thesis titled “Prototyping of a Predictive Process Monitoring Dashboard.”
In 2021, the ERCIS network defined five network clusters that serve as umbrella for its members to join forces. They span from method-orientation to domain-orientation, providing homes to the members’ various research interests. They serve as incubators for project proposals, joint research and teaching activities, and joint policy-making in the respective areas.
In our networked world, data is collected in ways never seen before. Extracting knowledge from this data and leveraging it to build intelligent systems will transform how business, government, and science are carried out. Many people believe that AI will bring forth changes that will be much more profound than any other technological revolution in human history.

In 2023, the emergence of generative AI has hit the headlines. Novel AI-based assistants can now generate elaborate texts, high-end images, or even program code. However, there are also risks associated with algorithmic decision-making and autonomous AI systems. They may be used for steering complex hacking activities, or autonomous weapon systems, or decide wrongly according to unknown biases in the data.

In the Information Systems discipline, humans and their interaction with technology are traditionally an important topic. We believe that this angle is also relevant for enabling real-world use of Artificial Intelligence, especially in the context of AI safety aspects or ethical problems. Therefore, the mission of the ERCIS “Data Science & AI” cluster is to advance research, education, and practice on human-centered data science and AI to augment human capabilities and improve societal well-being. We explicitly take a socio-technical perspective on data science & AI, focusing on the intersection of technologies, humans, and tasks.

The cluster Data Science and Artificial Intelligence is headed by:

**Oliver Müller** is a professor of Management Information Systems and Data Analytics at Paderborn University. His research interests focus on data-driven judgment and decision-making. This includes the design and use of machine learning solutions for supporting human judgment and decision-making, with a particular focus on the computational analysis of unstructured data (e.g., texts, images), as well as studying the acceptance and implications of data-driven decision-making in organizations.

**Mike Preuss** is an associate professor at LIACS, the Computer Science department of Leiden University. He works in AI, namely game AI, natural computing, and social media computing. He is well known for his work in evolutionary optimization, experimental methodology, and the pioneering drug discovery by means of an AlphaGo-inspired method.

The past year, members of the cluster were involved in organizing various conferences and workshops centered on the topics of data science, AI, and related themes, ranging from international events with thousands of participants to smaller regional or domain-specific gatherings. In the coming year, we will run the first ERCIS Data Science Winter School and plan to start a virtual series with research talks.
The Knowledge and Learning (K&L) cluster within ERCIS encompasses a diverse spectrum of academic interests, spanning the domains of Knowledge Management, Teaching, Learning, Education, and related areas. Initially, this cluster was positioned “between” the other four clusters, reflecting its comprehensive scope. In a similar vein, when ERCIS members were asked to align their research interests with clusters, each member invariably included the K&L cluster.

The K&L cluster represents a unique entity within the ERCIS clusters, presenting a distinctive challenge in terms of its contribution to the ERCIS community. Given the malleable and evolving nature of cluster roles, it is prudent to approach its definition with circumspection. Thus, it is advisable to avoid articulating a stringent vision that might unduly favor perspectives on the meaning of knowledge and learning within the ERCIS community.

Hence, the initial vision for the K&L cluster is conceived as a navigational tool, akin to a “rose of the winds,” for those venturing into the vast ocean of knowledge and learning. Positioned at the core of this metaphorical compass is knowledge and learning, which guides explorations in diverse directions within the academic landscape.

Additionally, the cluster aspires to evolve into a platform for knowledge exchange, where participants converge for mutual learning, whether in physical or virtual spaces. The cluster is envisioned as a catalyst for informal initiatives that require coordination, facilitation, cultivation, and nurturing. Its members will collectively determine pertinent subjects that warrant attention, aligning with their research interests.

The proposed activities of the K&L cluster include:

- **Mapping of research interests**: The primary endeavor of the K&L cluster involves collaboratively constructing a map of academic interests centered around knowledge and learning. This mapping exercise will visually depict the extensive array of interests in the ERCIS community.

- **Expanding knowledge**: The cluster intends to encourage its members to orchestrate mini-tracks within selected conferences, focusing on K&L-related topics. These mini-tracks aim to contribute to a comprehensive understanding of knowledge and learning in the realm of information systems research.

- **Connecting with other ERCIS clusters**: The cluster will actively pursue activities aimed at establishing connections with other clusters within ERCIS. Its members will assume the role of knowledge brokers, fostering cross-boundary initiatives that bridge common areas of interest with other clusters.

In summary, the K&L cluster seeks to serve as a versatile resource for navigating the expansive field of knowledge and learning, fostering knowledge exchange and connectivity with a commitment to inclusivity and adaptability within the ERCIS community.

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**NEW JOURNAL ON PROCESS SCIENCE**
With the involvement of the ERCIS cluster, a new journal called Process Science was established. Process Science is a joint effort of the steering committee of the BPM Conference and the IEEE Task Force on Process Mining. The aim of the journal is to publish high-quality scientific contributions that advance our understanding of processes and corresponding information systems. The journal is unique in its scope of equally embracing contributions that build on 1) formal and theoretical analysis, 2) engineering research, or 3) empirical research methods. It integrates technical and socio-technical discourses in data science, computer science and information systems research, as well as related research in management science, operations research, organization studies, psychology, and behavioural science. It is the mission of the journal to provide a service to the community and to authors. We offer a high-quality and well-managed single-blind peer review process with quick cycle times. Our ambition is to complete the first review round within one month. To this end, we work with bimonthly submission deadlines. Furthermore, we operate as a fully open access journal with transparent fees and opportunities for waivers. Baudewijn van Dongen and Jan Mendling serve as editors-in-chief.

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**PROCESS SCIENCE CLUSTER**
Process science is an innovative field of science that intends to pull together contributions from various disciplines, such as computer science, management science and information systems, to better understand and develop processes. To be inclusive, process science follows a broad understanding of processes that is agnostic to single extant disciplines. We define processes as a coherent series of changes which evolves over time, occurs at various levels and constitutes a phenomenon of interest.

Three reasons lead to the establishment of Process Science. First, processes are increasingly growing out of existing containers, and processes constitute a phenomenon of interest of themselves, specifically going beyond established units of analysis, such as application systems or organizations. Secondly, the world is increasingly changing and the study of processes helps to understand change, to deal with change and also to actively shape change. Third, the ubiquitous availability of data, combined with advanced data analytics capabilities, offers new opportunities to study processes using multiple data sources, such as digital trace data, social media data, body data and other quantitative and qualitative data.

The following figure depicts a core summary of Process Science. At the core of Process Science is the study of processes (foci). It aims to describe, explain and intervene in processes (objective). Thereby, it embraces an interdisciplinary viewpoint, integrating contributions from various disciplines (perspectives).

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**KEY SOURCES**
- The website of the new journal is here: https://www.springer.com/journal/44311
- The community paper on “Process Science: The Interdisciplinary Study of Continuous Change” is available online: https://www.researchgate.net/publication/356380441_Process_Science_The_Interdisciplinary_Study_of CONTINUOUS_CHANGE
- Please also check out the keynotes and presentations and join the community on: https://process-science.net

**RECENT PUBLICATIONS**
Grisold, T., Kremser, W., Mending, J., Recker, J., Brocke, J. (2022). Successful submission of the first review round within one month. To this end, we work with bimonthly submission deadlines. Furthermore, we operate as a fully open access journal with transparent fees and opportunities for waivers. Baudewijn van Dongen and Jan Mendling serve as editors-in-chief.

**PROCESS SCIENCE**
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The following figure depicts a core summary of Process Science. At the core of Process Science is the study of processes (foci). It aims to describe, explain and intervene in processes (objective). Thereby, it embraces an interdisciplinary viewpoint, integrating contributions from various disciplines (perspectives).
In the ERCIS cluster “Smart Manufacturing”, we exchange ideas on research how firms can use digital technologies in manufacturing in order to create new ways of providing customer value. We intend to connect the information systems discipline, which is at the heart of the ERCIS network, with adjacent disciplines such as operations management, mechanical engineering, computer science, and service research, which are also represented in the network. This way, we can benefit from the multiple perspectives that exist on the digital transformation of the manufacturing industry in Europe.

In 2023, we’ve organized online meetings and met personally at the ERCIS@ECIS reception in Kristiansand. We intensively discussed our research topics covering smart products and Industry 4.0, data analytics in supply chains, as well as new smart service value propositions and business models. We are looking forward to joint research and publication projects on smart manufacturing topics (e.g., on digital platforms in industrial settings). Future activities will also include the exploration of funding opportunities for joint research projects, the organization of conference tracks and journal special issues as well as the exchange of PhD students within the ERCIS network. Please contact Alessio Maria Braccini or Jens Poeppelbuss if you want to join this cluster.
The ERCIS headquarters is located in Münster, Germany. All full professors of the department of information systems at the University of Münster serve in the board of the network and are active in the fields of information systems, computer science, data science, supply chain management, medical informatics, and law. Additionally, the management team at the headquarters works with the board to organise regular meetings, joint teaching endeavours, and research proposals with the network partners.
The University of Münster’s Chair for Information Systems and Information Management, under the direction of Prof. Dr. h.c. Jörg Becker, currently consists of six postdoctoral researchers and nine research assistants.

Members of the Chair actively participate in research projects, receiving funding at both national and international levels. For an overview of these projects, please visit: [https://www.erc.is/go/cis_proj](https://www.erc.is/go/cis_proj).

Our research findings are disseminated in renowned journals such as BISE (Business & Information Systems Engineering), BPM (Business Process Management Journal), Electronic Markets, EMISA (Enterprise Modeling and Information Systems Architectures), SoB (Information Systems and e-Business Management), and GIc (Government Information Quarterly). We also present our research at esteemed conferences including ICIS (International Conference on Information Systems), ECISS (European Conference on Information Systems), ER (International Conference on Conceptual Modeling), and HCIS (Hawaii International Conference on System Sciences).

**Research Focus**

Conceptual modeling, in recent years, has become a leading method for describing, designing, and restructurizing Information Systems. It is widely adopted in large corporations for tasks such as business process improvement, software deployment, and compliance management. Our research delves into the retail sector, with a focus on organizations and application systems in various domains, including wholesale, physical retail, and e-commerce. We address key issues pertaining to the interplay between organizational processes and application systems, emphasizing process management, conceptual modeling, and Enterprise Resource Planning (ERP) systems in the context of retail.

Smart Cities research focuses on leveraging advances in information and communication technologies to enhance the efficiency, information sharing, and service quality within four core aspects of a city: Retail, government, mobility, and energy. Our key area of interest centers on the development of integrated and configurable reference models for these city constituents, advancing both scientific knowledge and practical value in the pursuit of smarter cities. Additionally, we delve into the theory of digital sovereignty for citizens and its integration into these reference models.

E-Government constitutes another pivotal area of our research, examining administrative processes and services within governmental and inter-governmental organizations. We explore the interactions between these entities, citizens, and businesses through Information and Communication Technology (ICT). Our work in E-Government combines strategic management with aspects of process management and economic sustainability, concentrating on both front-office and back-office operations. These topics are explored from content, technical, and conceptual perspectives.

**Current Research Project**

The DFG research group “Digital Medium-Sized City of the Future” (FOR 5392) investigates how medium-sized cities address the challenges of digitalization and develops digital tools to enhance their quality of life. This research group places a strong emphasis on four central structural areas in medium-sized cities: civil society and social services, government and administration, economy and energy, and education and culture. Prof. Becker, Dr. Distel, and Dr. Scholta from our Chair are actively involved in this project. To learn more about this research initiative, please visit: [https://www.digitale-mittelstaden-d-ziukunft.de/](https://www.digitale-mittelstaden-d-ziukunft.de/).

**Selected Publications**

Please visit [https://www.erc.is/go/cis_pub](https://www.erc.is/go/cis_pub) for a complete list of publications.

**Projects**

In 2023, we have continued working on our project Digital Innovation for Sustainable Development (INNO4S), funded by the Ministry of Culture and Science of North Rhine-Westphalia, in which we create open educational resources in collaboration with the universities in Cologne and Paderborn. After developing an extensive teaching case on digital innovation and clean energy, the second case developed in the project will focus on responsible consumption and production. The full set of six teaching modules is expected to be released by the end of 2024.

In November, we also launched CURATE, a new Erasmus+ project coordinated by Haaga Helia in Helsinki and partners in Nice, Kolise, and Innsbruck. CURATE will combine AI solutions related to the entrepreneurial process to develop an incubator program that will provide migrant students with a challenge-based platform to better meet their learning styles and provide transferable forward-looking skills.

**Journal Publications**


INTRODUCTION

The Chair of Information Systems and Business Process Management takes a distinct process view on the design, use, and impact of information technology in organizations. We analyze processes based on digital trace data, understand processes applying large scale empirical investigations and design new processes applying innovative design science research approaches. We are committed to make processes run better both in industry and society. We enable more resilient and more sustainable processes as well as much more exciting customer and employee experiences.

PROCESS SCIENCE FROM DIGITAL TRACE DATA

In a world of constant change, organizations need to be sensitive to the many dynamics impacting today’s work and live. Our research therefore enables organizations to sense and respond to such change. We capture data from processes as they unfold and instantly analyze this data. We include data from various sources such as enterprise systems, sensors, social media, and wearables, creating a new view of processes. For instance, we include body data to account for cognitive and emotional effects in processes and to allow for neuro-adaptive processes.

SITUATED EXPLANATIONS AND PROCESSUAL PATTERNS

In order to support organizations in times of change, we also contribute to the further development of research methods in information systems and process research. In a recent study with international colleagues, for instance, we show how research can make more situated explanations to strengthen its relevance. We developed five key principles for building situated explanations and introduce the idea and concept of “processual patterns”. Complementing traditional theories with context-specific knowledge, we envision new ways how we accumulate knowledge and make a real impact in the digital realm.

DEALING WITH COMPLEXITY IN DESIGN SCIENCE RESEARCH

Designing innovative solutions to real-world problems does not follow straight forward process. The same is with Design Science Research. In our research, we therefore introduce an innovative methodology to plan, scope and conduct design science research that systematically accounts for the evolutionary nature of design research. Our paper, forthcoming in MISQ, showcases an innovative methodology that adds a hierarchical organizing logic to DSR, enabling the decomposition of projects into coherent parts known as “echelons.”

RESEARCH

We work on reducing the practical runtime needed to process such compute and memory-intensive tasks. For instance, we resort to high performance computing and distributed computing to accelerate the overall analysis of the data. Another example is the development of contextually new techniques, which only consume a fraction of the compute and memory resources but still yield high-quality models similar to those obtained via their original counterparts. The group is also involved in the development of models that are tailored to novel applications from a variety of domains.

EXAMPLE: Al4Forest

Managing and conserving forest ecosystems in Europe and worldwide is an indispensable component of climate adaptation and climate change mitigation strategies. Precise and up-to-date information about the health and the carbon balance of forests are, hence, critical to assess the current state of forests, trigger appropriate countermeasures against forest loss, and develop improved management strategies. Al4Forest project brings together experts in artificial intelligence, applied mathematics, computer science, spatial remote sensing, and climate change, both from France and Germany. The resulting techniques will facilitate the generation of detailed forest maps at a very high spatial and temporal resolution for the whole European continent and the entire world, including tree species identification down to the level of individual trees. Supported by the Bundesministerium für Bildung und Forschung (BMBF), the project is coordinated by RapidEarth: A Search Engine for Large-Scale Geospatial Imagery, in Proceedings of the ACM SIGSPATIAL 2023, accepted.

PUBLICATIONS


Example: Al4Forest
The primary objective of our chair is to tackle the issues that come with the increasing complexity and uncertainty of today’s supply chains. In particular, we provide research contributions by zooming in on the current trends of digitalised supply chains and by examining applications of new technologies in conjunction with emerging opportunities through digital transformation.

**CURRENT RESEARCH PROJECTS**

Our research activities can be divided into three main research areas: Supply Chain Digitalization, Supply Chain Integration, and Supply Chain Security and Crisis Management.

Within the Supply Chain Digitalization group, we are currently developing a reference process and a planning model to align Prescriptive Maintenance with Production Planning and Control with different industry partners. Furthermore, we are extending our Maturity Model for Digital Supply Chains, giving advice on their transformation.

In the area of Supply Chain Integration, our research focuses on integrating Supply Chain Risk Management activities into Sales & Operation Planning for dealing with current uncertain environments. Starting in July 2023 our group is joined by Prof. Dr. Luiz Felipe Scavarda do Carmo from the Pontifícia Universidade Católica do Rio de Janeiro (PUC-RJ) as a visiting scientist for one year.

The third research area Supply Chain Security and Crisis Management shines a light on addressing challenges posed by disruptive events. The group continued its research in response to the COVID-19 pandemic with three research projects, the first funded by the BMBF, and the latter funded by the BMWF. The recently concluded Spacelmpact project enhanced the simulation platform of our former project EpifPredict to forecast COVID-19 case loads in Germany at a regional level using real-time spatial, mobility, and behavioural data. In the OptimAgent project, we develop a micro-simulation system that encompasses a full-scale population model of Germany to support decision makers in evaluating the effectiveness of infectious disease intervention strategies. In the PROGNOSIS project, we establish a simulation-based testbed for resource allocation decisions in a hospital network based on pandemic scenarios provided by our research partners. In addition to pandemic research, the DigCBA project, led by our ERCIS partners at the University of Agder, Norway, reached its second project year. The project targets designing, developing, and evaluating evidence-based frameworks to support selecting the most suitable digital technology for delivering cash-based assistance to refugees.

**SELECTED PUBLICATIONS**


**DISSERTATIONS**

Machine Learning supported Decision Making in Operational and Real-Time Road Freight Transport Planning, Sondra Lechtemberg, January 2023

Towards Data Analytics-Driven Supply Chain Performance Measurement Systems, Raquel Gama Soares de Mello, May 2023

Complexity-based Selection and Implementation of Heterarchical Production Planning and Control Architectures, Dennis Horschtemper, May 2023

Facilitating Supply Chain Integration through a Synthesis Framework and a Context-Specific Maturity Model in the Scope of Industry 4.0, Eduardo Francisco Israel Horstkemper, July 2023

Secure-by-Design Enterprise Architectures and Business Processes in Supply Chains, Michael Middeldoff, July 2023

**RESEARCH PROJECTS**

The ITM is the leading Institute for Information-, Telecommunication- and Media Law in Germany with more than 15 researchers. The Institute’s work aims at exploring the legal framework and underlying policies of the information society with a particular focus on “information” as an economic and cultural good. Our research focuses on Information, Telecommunication and Media Law as well as related areas such as Copyright, Platform Regulation or E-Commerce and Consumer Protection Law. Our current projects address the emerging subjects of Artificial Intelligence Law, Algorithms, Data Protection Law or the Future of Legal Professions and Institutions. Currently, the ITM is involved in several EU-funded and national projects:

- Art Law Clinic is a project in cooperation with the Academy of Fine Arts Münster. Its basic idea is: “Law students for art students”. Art students can seek entirely free the help of law students to solve their basic legal problems, which occur during their academic studies. By combining the inherently different but closely connected topics of law and art, the project will increase the interdisciplinary and mutual understanding between law students and art students and their respective subjects.

- Research Center for Industrial Property Rights: The ITM also hosts the Research Center for Industrial Property Rights trying to connect science and economics. The Research Center is supported by an association of companies, lawyers and patent attorneys.

- Matters of Law in the German Research Network (DFN): The German Research Network (Deutsches Forschungsnetz/DNF) provides a communication network for universities and research facilities in Germany that not only connects them with one another but also with the community of research and education networks worldwide. Increasingly, the DFN-members are facing legal questions regarding liability, telecommunications and data protection. The ITM assists in solving those difficult issues and offers general legal advice to the members.

- Legal Information Office DH.NRW: The Legal Information Office DH.NRW (Rechtsinformationsteil DH.NRW) is a contact point for all those involved and interested in e-learning and digital teaching. In May 2020 it was established under the organisational umbrella of the Digital University of North Rhine-Westphalia and is located at the ITM. Since then, the Office provides teachers and students legal guidance concerning e-learning and digital teaching.

- FAIR Data Spaces: FAIR Data Spaces is an interdisciplinary project funded by the Federal Ministry of Education and Research. The project deals inter alia with the issues of the immaterial-legal classification of data exchanged via NFDI and Gaia-X. The aim of the project is to establish a common cloud-based data space for industry and science by merging the two initiatives Gaia-X and NFDI.

**SELECTED PUBLICATIONS**


Hoeren (2023). Corporate Liability under the GDPR.


Fischer/Klostermeyer/McGrath (2022). Urheberrechtliche Zulässigkeit der Archivierung auf Mastodon (Copyright law permissibility of archiving examination papers in a plagiarism software database), ZUM 2022, 371.

The transformation of research infrastructures (S. Jarvenpaa, B. M., S. Klein) Digitalization has profoundly shaped and transformed research, which increasingly relies on commercially provided tools and data. Generative AI has given a spurt to the academic debate and reflected on the fundamentals of research, including the nature of knowledge, the role of theory, datafication and infrastructuring of research. The dark side of datafication (D. Ngwenyama, CCD, F. Rowe, F. H. Zinner Henriksen, DK, S. Klein) “We interrogate how tech firms use social practices and platform design to strategically manipulate individuals into accept their research projects and platform design to strategically manipulate individuals into accept their research projects and transform them into digital habitus and to identify themselves as homo digitalis, who view all their relations (social and economic) as digital. We critically analyze the case of Microsoft Viva to provide an illustration of how mundane digital tools can condition our reality and entrap us into an open prison.” Adapted from the abstract of Ngwenyama et al. 2023.

Robotic-assisted surgery and the transformation of work (M. B. Watson Manheim, S. Klein) We use Bartunek and Moch’s (1987) framework of three orders of change to reconstrue and reflect the impact on health care in light of the growing adoption and diffusion of robotic-assisted surgery. We are particularly interested in the transformation of surgery, the division of work in the operating theatre, new training regimes, as well as the institutionalization and financial implications.

Selected publications


Some of the most challenging real-world problems involve the systematic and simultaneous optimization of multiple conflicting objectives. As most of those Multi-Objective Optimization problems cannot be solved exactly, we apply optimization techniques from Evolutionary Computation to approximate optimal compromises with special focus on multimodality.

In the context of Algorithm Benchmarking, the group evaluates the performance of nature-inspired techniques and contributes to algorithm design. Algorithm Selection deals with the selection of the best-suited algorithm for a given problem in an automated fashion. Methodologically, AI and ML techniques, in particular deep learning and classification approaches, play a fundamental role in constructing accurate and efficient selection models. Moreover, we will conduct the Data Science and AI research cluster.

**Selected Publications**


**Current Research Projects**

- Current use cases within the Medical Informatics Initiative
- The IPI participates in several technical and clinical use cases to show scientific and/or clinical impact by the activity of our Medical Data Integration Centre. These include cardiovascular disease, involvement of patient reported outcomes, cancer research, annotation for natural language processing, medical device consultation
- An own coordinated use case – called EyeMatics – which will focus on eye disease research that will combine clinical data of six German hospitals and novel imaging sources such as OCT-scans to unravel new biomarkers of retinal disease.

**Biomedical Informatics**

- The IPI participates in the DFG clinical research group “Male Germ Cells: from Genes to Function” (CRU 326), taking care of all OMICS data analyses. The project studies male infertility by means of genomic and transcriptomics analyses, including humans as well as model organisms like zebrafish or marmoset. The project has been positively reviewed for an extended DFG collaborative research center, called Reproduction.ms that will hopefully start in the first half of 2024.

**Key Publications**

The associated partners are research institutions mainly from Europe, but also from around the world, that have long-standing connections with the network. All associated members are outstanding Information Systems institutions, and, more importantly, the personal relations and close ties between the researchers lead to short communication lines and reliable structures for joint research endeavours.
The University of São Paulo (USP), established in 1934, is Brazil’s premier institution for higher education and research, representing over 20% of the nation’s research output. Operating across seven campuses, USP offers more than 250 undergraduate and graduate programs to nearly 100,000 students. The School of Arts, Sciences and Humanities (EACH), established in 2005, hosts interdisciplinary programs, including Information Systems. USP has two other notable units focusing on information systems: the Institute of Mathematical and Computer Sciences (ICMC) in São Carlos and the School of Philosophy, Science, and Literature (IFCLUP) in Ribeirão Preto. With a combined faculty of over 100 researchers, USP contributes significantly to diverse computing fields, from artificial intelligence and big data to robotics and web systems. The university is at the forefront of impactful research, producing almost 50 research papers daily, with a particular emphasis on applied computing, including areas like bioinformatics, machine learning, and social networks.

SELECTED PUBLICATIONS


RESEARCH PROJECTS

Process Mining: Optimizing business process is vital for achieving organizational strategic goals. This project explores advanced process knowledge using machine learning and computational intelligence. Ongoing work includes process discovery, concept drift, legal compliance, legal process mining, educational process mining, interpretability and explainability with visualization, trace clustering, and iterative clustering, aiming at process and organizational improvement.

Social Robotics: Social robots enhance human activities through interactive support. This project investigates their role in aiding specific groups in various contexts. Applications include diagnosing depression in older adults, proposing activities for mental well-being, and assisting lonely seniors, children with autism spectrum disorder, and isolated hospital patients. The focus is on utilizing social robotics to address unique needs and enhance social interactions for a better quality of life.

Data on the Web: Working with data on the Web is difficult due to numerous issues which an interested data consumer can come across, the main ones being data interoperability issues on various levels of abstraction. The research is focused on a set of techniques and tools for proper publishing and consumption of data on the Web.

Multi-model databases: Recently, relational databases and NoSQL database systems are being used in various applications. The research is focused on various aspects of efficient and unified management of multi-model data, including conceptual modeling, schema inference, unified querying, or evolution management.

News

The Department of Software Engineering focuses on teaching and research in the field of software and database systems and their applications, bioinformatics and other associated areas as similarity retrieval and parallel architectures. Its members are involved in several research projects funded by the Czech Science Foundation and the Technology Agency of the Czech Republic. The research is conducted within national and European basic research, applied and contract research projects.

• Bioinformatics: The research focuses on the development of software tools applicable mainly in the domain of structural bioinformatics and visualization. These include tools for protein binding site detection, with the application in computational drug discovery, or tools for visualization of the structure of macromolecules.

• Compilers: Compilers as the key component of high-performance computing as well as software engineering tools. Our research activities include specialized code generators for performance-critical code, compiler support for dynamic languages, languages for Big Data processing, and translation between domain-specific languages.

• High performance computing (HPC): HPC research activities and topics of interest include architectures, multi-core CPUs and GPUs, languages (and compilers) for parallel data processing, distributed computing.

• Research Software Engineering (RSE): RSE helps scientists improve and speed up their code by up to several orders of magnitude, making it possible to process much larger volumes of data in the same amount of time.

PUBLICATIONS


ABOUT THE INSTITUTION
The history of the Institute for Information Systems Science at the University of Turku dates back to 1971. Today the Institute is a part of the Department of Management and Entrepreneurship at the Turku School of Economics. The mission of the Institute is to educate IS professionals with a strong combination of both general management and IS-specific skills. In research, the Institute focuses on supporting companies and public organizations as well as the third sector in various aspects of management, governance, and utilization of Information Systems. The Institute is a pioneer in international education, even at the whole university level, running three international master’s programs.

RESEARCH TOPICS
The IS research at the University of Turku covers a wide spectrum of IS research themes with a focus on governance and management of ICT, ICT ethics, consumer behavior, digital environments, and ICT adoption and use by organizations and individuals. In recent years, artificial intelligence has become a focal research area of the Institute.

Smart Terminals – SMARTER project (2021–2023) supports the digitalization of small businesses by developing competencies for digital product development together with designing regional operating models.

DOCTORAL THESES
Anushree Luukela-Tandon (2023) “Fear of missing out on social media: implications for private and professional lives”.

SELECTED PUBLICATIONS


ABOUT THE INSTITUTION
The KEDGE Business School – Department of Operations Management and Information Systems (MOSI) is part of the Sea4Value program, (2021–2023) and is a member of the Conference des Grandes Écoles. It is also recognised as a French business school with four campuses in France (Paris, Bordeaux, Marseille and Toulon), three abroad (Shanghai, Suzhou and Dakar) and three partner campuses (Avignon, Bastia and Bayonne).

The KEDGE community is made up of 15,275 international academic partners, 300 students (including 25% international), 207 professors (43% coming from abroad), 275 international academic partners, 300 company partners and more than 75,000 alumni around the world. KEDGE Business School is EACSB, EQUIS and AMBA-accredited, and is a member of the Conference des Grandes Écoles. It is also recognized by the French government, with labelled programmes, and has obtained the EES-Pig label. KEDGE’s Master in Management was ranked 46th worldwide, the Executive MBA 59th worldwide and 15th in Europe by the Financial Times and. KEDGE Business School is ranked 2nd among all business schools in Shanghai ranking.

KEDGE Business School offers variety of degree programs (including Undergraduate, Short-Term, Exchange, PhD, and Postgraduate programmes) performed by its core faculty of five departments: Management, Operations management and Information system, Marketing, Strategy, and Accounting, Finance, Economics. Kedge also covers areas such as global responsibility, supply chain management, wine and spirits management, arts & culture management and innovation in SME. Its faculty also support students participating in Thesis Lab, Game lab, and Case Lab.

The “Operations Management and Information Systems (MOSI) department is valued for its competency in the area of Information and Decision Science, Supply Chain Management, Knowledge Management, Serious games, e-business, and Organizational Learning. The main objective of the department of MOSI at Kedge Business School is to develop applied research within the following fields: information systems management, procurement and supply chain management, and quality management.

RESEARCH PROJECTS
Majority of research topics currently conducted by the faculty of MOSI department includes multiple disciplines, given in the following: IS in operations management, purchasing and IS, innovation capacity, e-distribution, e-commerce, e-business, supply chain and operations management, decision-making & decision analysis, digital transformation in supply chain, organizational learning/knowledge management/competences – communities of practices; gamification in supply chain, supply chain network design, sustainable supply chain and manufacturing, humanitarian logistics, simulation and optimization in supply chain management, maritime transportation and port management.

Our department has a close collaboration with the four Centres of Excellence of Kedge Business School: Excellence in Supply Chain, Excellence for Sustainability, Marketing and New consumption, Food, Wine and Hospitality Management as well as with the three Centres of Expertise on Innovation & Health Management, on Finance Reconsidered, and Creative Industries & Culture expertise.

KEDGE BUSINESS SCHOOL
OPERATIONS MANAGEMENT AND INFORMATION SYSTEMS (MOSI) DEPARTMENT
www.kedgebs.com

PROF. KEIJA SUOMI
University of Turku, Finland

PROF. OLIVIER DUPOUET
Kedge Business School, Bordeaux, France
There is no doubt we live in a heavily digitised world. Digital technologies positively and negatively influence our future. Staff from SBE, 2 postdocs and 11 current PhDs. We have many existing projects with over 40 industry partners including Intel, SINTEF Norway, Fidelity Investments, and the University of Economics and Business.

Selected Publications


The research strands of ROSETTA will explore (i) Temporal theories – how we think about a technology impacts and should impact our lives in more sophisticated and contemporary ways than we do now, (ii) Temporal methods and equipment – how we can use contemporary equipment such as neuro scanners, GPS trackers, advanced AI and other technologies to study the temporal aspects of technology more accurately, (iii) Temporal context – how we can effectively understand and improve the impact of tech on the time of specific groups of people e.g., children, workers, older people or those with disabilities.

The ROSETTA fellows will be recruited from computer science, medicine, biomedical engineering, education, psychology, software engineering, information systems, human-computer interaction and management. ROSETTA outcomes will respond directly to EU policies such as Shaping Europe’s Digital Future and the European Declaration on Digital Rights and Principles.

Current Research Projects

Unitus remains actively engaged in various research projects centered around digital transformation, digital twin transition, and sustainability. Noteworthy projects undertaken in 2023 are as follows:

- **Giustizia Agile** (funded by the Italian Ministry of Justice). The project is coordinated by the University of Tuscia and partnered by 10 universities in Lazio, Toscana and Umbria. The project’s main objective is to develop a technical organisational framework by implementing new organisational models and digital technologies. The project’s final conference was held in Viterbo on 21st September 2023.

- **Cybersec4H**: Cybersecurity hardening for AI solutions (funding agency: National Competence Center Cyber 4.0) was co-funded by 3rd Place, Datix & AI Solutions Group, in collaboration with the University of Tuscia. The project sought to design, develop, and validate a software solution to combat Artificial Intelligence Attacks, automating the hardening of AI-based systems. The project introduced the AIA Guard platform, currently available for trial at https://www.aiaguard.com.

- **Frontshop**: a FRONTrunner approach to Systemic circular, Holistic and inclusive solutions for a new Paradigm of territorial circular economy. The FRONTSHP project aimed to facilitate the green transition of the Polish Lodzkie region, promoting decarbonization and territorial regeneration through the demonstration of highly replicable circular systemic models (https://frontshop.eu).

Selected Publications


The Lero group in Galway explore how the proliferation of continually emerging, disruptive digital technologies positively and negatively influence our future. Our work takes a critical stance examining society’s over-reliance on tech in an increasingly digital and accelerated dynamic, and focusing on the responsible use of technology for the public good. We critically examine emerging concepts such as responsible tech and digital transformation, and how emerging tech such as AI, blockchain, on-line platforms and emerging methods such as agile and flow all impact work and so-sieties continually emerge claiming to allow negatively influence the future of work and proliferation of continually emerging, disruptive digital technologies positively and negatively influence our future. Staff from SBE, 2 postdocs and 11 current PhDs. We have many existing projects with over 40 industry partners including Intel, SINTEF Norway, Fidelity Investments, and the University of Economics and Business.

Selected Publications


The research strands of ROSETTA will explore (i) Temporal theories – how we think about technology impacts and should impact our lives in more sophisticated and contemporary ways than we do now, (ii) Temporal methods and equipment – how we can use contemporary equipment such as neuro scanners, GPS trackers, advanced AI and other technologies to study the temporal aspects of technology more accurately, (iii) Temporal context – how we can effectively understand and improve the impact of tech on the time of specific groups of people e.g., children, workers, older people or those with disabilities.

The ROSETTA fellows will be recruited from computer science, medicine, biomedical engineering, education, psychology, software engineering, information systems, human-computer interaction and management. ROSETTA outcomes will respond directly to EU policies such as Shaping Europe’s Digital Future and the European Declaration on Digital Rights and Principles.

Current Research Projects

Unitus remains actively engaged in various research projects centered around digital transformation, digital twin transition, and sustainability. Noteworthy projects undertaken in 2023 are as follows:

- **Giustizia Agile** (funded by the Italian Ministry of Justice). The project is coordinated by the University of Tuscia and partnered by 10 universities in Lazio, Toscana and Umbria. The project’s main objective is to develop a technical organisational framework by implementing new organisational models and digital technologies. The project’s final conference was held in Viterbo on 21st September 2023.

- **Cybersec4H**: Cybersecurity hardening for AI solutions (funding agency: National Competence Center Cyber 4.0) was co-funded by 3rd Place, Datix & AI Solutions Group, in collaboration with the University of Tuscia. The project sought to design, develop, and validate a software solution to combat Artificial Intelligence Attacks, automating the hardening of AI-based systems. The project introduced the AIA Guard platform, currently available for trial at https://www.aiaguard.com.

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Selected Publications


The Department of Information Systems and Computer Science (DISCS) at the Liechtenstein Business School (LBS) has set itself the task of shaping Liechtenstein’s future IT landscape through cutting-edge research and excellent education.

The academic portfolio of DISCS includes technical and economic foundations of business information systems. On the technical side, the department’s expertise includes data science, artificial intelligence, security and distributed systems. From an economic and societal perspective, the department’s research addresses novel business processes, digital transformation and innovation, sustainability and human-centric computing. Collaboration with other LBS departments and other research groups in Switzerland, Europe and beyond, leads to further synergies in the areas of digital finance and entrepreneurship, innovation and technology.

**SELECTED RESEARCH PROJECTS**

- **Process Science (Liechtenstein Research Fund)** – This project seeks to combine and synthesize contributions, theories and methods from multiple disciplines in order to create the conceptual foundations for process science. Process science shall provide the opportunity to accumulate interdisciplinary knowledge on processes in order to make a real-world impact.

- **The Emergence of Industrial Industry of Things Solutions (Liechtenstein Research Fund)** – The goal of this research project is to describe the emergence of complex industrial internet of things systems, to understand this phenomenon in depth and to provide explanations for the development and emergence of these systems.

- **Online Choirs: How to carry out virtual choir rehearsals with the help of digital tools (ERASMUS+)** – This project seeks to enable choirs to carry out online rehearsals by designing guidelines regarding technology, choir pedagogy and social interaction.

- **Understanding this phenomenon in depth and to provide explanations for the development and emergence of these systems.**

**PUBLICATIONS**


**DISSERTATIONS AND HABILITATIONS**

Yulia Litvinova: “The Role of Self and Place in the Digital World: Challenges for Hybrid Work and Virtual Collaboration” (Dissertation)

Johannes Schneider: “Making AI Understand Humans and Making Humans Understand AI” (Habilitation)

**SELECTED PUBLICATIONS**


- Identification of Pathological Lung Sounds Using Artificial Intelligence Techniques. - DITA (2023). Funded by the KTU Research and Innovation Fund and in partnership with Lithuanian University of Health Sciences.


- Challenge Based Learning in AI Enhanced Digital Transformation Curriculum – ASSIS-TANT (2022–2024). Funded by Erasmus+ and coordinated by KTU.

- Development of Measures to Increase Efficiency of the Public Sector Buildings Life-Cycle by Applying Building Information Modeling – BIM (2019–2022). Funded by EU structural funds. In cooperation with the Vilnius Gediminas Technical University and several Lithuanian public institutions; coordinated by the Ministry of Environment of Lithuania.

The Department of Information Systems (IS) is one of four departments within the Faculty of Social Sciences at the University of Agder (UiA) and is one of the largest and most active IS departments in Norway.

The department offers study programmes and research on the relationships between digital technologies and societies, organizations, and individuals. CeDiT applies disciplinary, multidisciplinary, and interdisciplinary approaches and draws on a wide range of theories from social science.

Centre for Integrated Emergency Management (CIEM) focuses on technology-based innovation for societal resilience. CIEM conducts research in collaboration with emergency responders in the areas of community resilience and crisis communication, information sharing for situational awareness, technological advancements to support humanitarian aid, cybersecurity, and new technologies for emergency management operations.

In addition, the department has research groups on Human Centered AI and Systems Development.

CURRENT RESEARCH PROJECTS

AŁA’sers (2020–2024) is a project funded by the Research Council of Norway addressing the “black box” problem contributing to responsible use of AI when digitalizing public services.

DigCBA – Digital Cash-Based Assistance (2021–2024) is funded by The Research Council of Norway. The project focuses on what public services are suitable for digital communication channels.

Events

European Conference on Information Systems – ECIS was hosted by the department in June 2023 and attracted around 750 IS scholars from large parts of the world.

SELECTED PUBLICATIONS


With more than 20 thou. students, 11 faculties and 984 academic staff members, the University of Gdańsk, is the largest institution of a higher education in the Pomeranian, Poland. It offers the opportunity to study in 89 different fields of studies with more than 270 specializations.

The Department of Business Informatics (BI) of the University of Gdańsk, is involved in research and teaching in the field of Business Informatics on the Bachelor, Master, Post-Diploma and Doctoral levels. For 20 years, the Department of Business Informatics has been running the Pomeranian Regional Academy Cisco, educating hundreds of computer network administrators with professional skills certified by international Cisco certificates.


This book was awarded in the Competition of Polish Society for Informatics, for the best informative book of 2019.

The Department is also active internationally, organizing conferences including the 10th European Conference on Information Systems (ECIS 2002) entitled “Information Systems and the Future of the Digital Economy”, the 7th International Conference on Perspectives in Business Informatics Research (BIR 2008), the 8th International Conference on European Distance and E-Learning Network (EDEON 2009) and the series of events rebounded now as EuroSymposium on Digital Transformation. The Department is the associate partner of the European Research Center for Information Systems (ERCIS) consortium, from 2004.

RESEARCH PROJECTS

On 28th of September 2023, EuroSymposium2023 on Digital Transformation took place in Sopot, Poland. All submissions were blind reviewed and the acceptance rate was 32%. Accepted papers were published in LNBI series by Springer.

Jörg Becker and Jacek Maślankowski from ERCIS are track chairs of the track TP Digital Transformation (EuroSymposium2023) at the 32nd International Conference on Information Systems Development (ISD 2024). ISD conference will be hosted by University of Gdansk on 26–28 August, 2024. ISD provides a forum for research and developments in the field of information systems. The theme of ISD 2024 is “Harnessing Opportunities: Reshaping ISD in the post-COVID-19 and Generative AI Era”. New trends in developing information systems emphasize the continuous collaboration between developers and operators in order to optimize the software delivery time. The conference promotes research on methodological and technological issues and how IS developers and operators are transforming organizations and society through information systems.

The ISD 2024 conference held this year also provides an opportunity for researchers and practitioners to promote their research, practical experience, and to discuss issues related to Information Systems through papers, posters, and journal-first paper presentations.

PUBLICATIONS


The Department of Applied Informatics, chaired by Professor Ngoc Thanh Nguyen, is part of the Faculty of Information and Communication Technology at Wrocław University of Science and Technology. The faculty was officially opened on 15 September 2021 at Wrocław University of Science and Technology. FICT consists of 12 fields of study, nearly 5000 students, 8 departments, and 500 scientists and academic teachers. Our department employs 9 professors, 28 assistant professors, 7 research assistants and 11 Ph.D. students. We regularly co-organize two international conferences: the Asia Conference on Computational Collective Intelligence (ACIIDS) and the International Conference on Computational Collective Intelligence (ICCCI).

CURRENT RESEARCH PROJECTS

We are organised into the following research teams: Computational Collective Intelligence, Internet and Multimedia Information Systems, Processes Analysis and Semantic Systems, Knowledge Engineering, Intelligent Data Processing Technologies, Software Engineering and Data Science, Security and Reliability of IT Systems, and Database Systems.

A list of current projects:
- An intelligent system for creating maps for 3D games based on the Unreal Engine using machine learning techniques, 2020–2023. The project is co-financed by the European Union, NCBR: GAMEINN-V
- Highly Accurate and Autonomous Programmable Platform for Providing Air Pollution Data Services to Drivers and Public (HAPADS), 2019–2023, NOR/POL/NOR/HAPADS/0045/2019
- An Artificial Intelligence-Powered Multimodal Platform to Unveil New Biological Pathways in Amyotrophic Lateral Sclerosis: The Impact of Aging and Sarcopenia, Unveil ALS, JPND Call 2023 (under evaluation)
- Creation and development of Regional Centers of Digital Medicine, Medical Research Agency (under evaluation)
- AIV6: An Intelligent Platform for Foreigner’s (under evaluation)

PUBLICATIONS


HIGHLIGHT PROJECT

The Department of Information Systems underwent a major change of its educational offer at the levels of Bachelor and Master. The core degree program offered by the Department of Information Systems was an integrated Master on Engineering and Management of Information Systems. As an integrated Master, students were enrolled directly to a Master program. The study plan of the integrated Master was designed taking into consideration that all students were following the same academic route. Major changes in the Portuguese national regulations prevented engineering schools from offering integrated master degree programs, reserving that possibility for a few areas with strong regulation by state agencies such as medicine and architecture. Therefore, the Department of Information Systems had to review its portfolio of degree programs.

The reorganization of the educational offer led to the creation of a Bachelor and a Master degree programs that share the designation of “Engineering and Management of Information Systems”. Learning outcomes of both programs are aligned with the Department’s vision that the information systems field is oriented to professional activities that seek to make use of information technology to create value to human endeavours and social situations. In preparation for the reorganization the Department took into consideration educational trends, curricula recommendations and engaged in an internal debate about IS professional functions.

The study plans of the new programs had to be designed according to prescribing aligned with the new Portuguese regulations and aim at enabling more flexibility to students and to their academic routes. Another restriction was a concern on ensuring the readiness of Bachelor graduates – 3 years graduates in Engineering and Management of Information Systems – for junior professional profiles. Learning outcomes for the Bachelor program address the development of competencies relevant for the following professional functions: Information curation; Enlivenment of informational objects through IT; Development of IT applications; Implantation of IT applications; Upkeeping of the portfolio of IT applications. The Master program addresses competencies that build upon those covered in the undergraduate program and are related with other professional functions, namely: Design of IS architectures; Setting up of information-centered, IT-enhanceable enterprise capabilities; Oversight of IT infrastructures; Control of the fit between the IS architecture and the reality; Studies on the impact of IS on society; Administration of the IS unit.

KEY PUBLICATIONS


This research aims to develop core foundational technologies for optimizing the traffic signal operation system at city-wide scale intersections in situations where autonomous vehicles and conventional vehicles coexist. To achieve this goal, research focuses on defining intersection signal operation strategies and control technology issues, building digital twin models, developing data engineering technologies, creating big data analysis techniques, and developing and applying optimization algorithms.

- **Fashion Item Recommendation Systems**

**SELECTED PUBLICATIONS**


**SELECTED RESEARCH PROJECTS INCLUDE**

- **DIGYMATEX** is an EU-funded project that aims to provide evidence-based tools to assist in understanding and determining children’s digital maturity. The main outputs include the Digital Youth Maturity Index (DYM), an innovative tool that will precisely measure and predict harmful and beneficial ICT-related children behavior and consequences for specific user groups, and the DIGyou3 program, a recommendation program that will help to improve relevant dimensions of children’s digital maturity, and the development of ICT-related competencies.

- **Prof. Konstantina Valogianni is participating in the EU MSCA Doctoral Network on Distributed Ledger Technology: Innovation & Ecosystem Management, aiming at creating a platform for researchers to engage in the co-production of knowledge by investigating state-of-the-art challenges and societal implications of Blockchain technology across actors and industry boundaries.**

**SELECTED PUBLICATIONS**


**IE BUSINESS SCHOOL INFORMATION SYSTEMS AND TECHNOLOGY DEPARTMENT**

IE Business School is one of Europe’s top providers of management education. IE’s Information Systems and Technology Department (ISTD) is responsible for all technology-related courses and pursues research on the transformative use and impact of digital technologies in today’s world.

Research work within ISTD includes themes such as Digital Innovation, studying the interplay between organizational capabilities and digital innovation, as well as value co-creation in digital platforms; Business Intelligence, Analytics and Machine Learning, researching the application of AI and machine learning in key areas such as sustainability, Green IS, education and e-health; Economy of Information Systems, focusing on IoT outsourcing and Cloud Computing, organizational networks and the Sharing Economy; and Information Security and Privacy, investigating topics such as cybersecurity behavior of Spanish householders, hacker behavior analysis, and machine learning to improve security.

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**SELECTED PUBLICATIONS**

The Smart Computer Systems Research and Engineering (SCORE) lab at Universidad de Sevilla focuses its research on the development and operation of intelligent systems applied to a wide variety of domains. Currently, it spans four major research areas, namely: Natural Computing, Neuromorphic Engineering, Software and Systems Engineering, and Information Systems. The research on Information Systems aims at developing and applying models, techniques, and software tools to improve the performance and human resource management of business processes with a particular emphasis on unstructured knowledge-intensive processes.

**Research Projects**

- **SCORE**: Digital Transformation of the Public Administration Driven by Intelligent Contracts. This project seeks to contribute to the digital transformation of the public administration by improving the efficiency and tamper-proof monitoring of digital services regulated by intelligent contracts.

- **BUBO**: Bots and human collaboration for improving the development and operation of digital services. Our goal at BUBO is to develop techniques, models, and tools to increase the level of automation in the development and operation of digital services while supporting human interaction as a key part of their functioning.

- **STATUS**: Mashup-based Multi-Domain Compliance Management System. STATUS is a proof-of-concept project, whose goal is to develop an industry-ready compliance management system that advances the state of the art by providing a low-code solution to automatically monitor compliance in an organization from the data stored in its information systems.

- **TAPIOCA**: Hybrid intelligence to develop advanced support for business process compliance. This project seeks to design and develop models, techniques, and tools that advance the support for business process compliance towards more autonomous systems that predict and reason upon compliance violations, and that are able to interact with the stakeholders in a humane manner.

**Publications**


- **LoVisQuick**: A Visual Language for Visualizing and Analyzing Business Processes from Event Logs.


- **Coffee**: This project uses AI in education specifically for severely challenged learners in an adaptive learning mode.

- **U4IoT**: This project recognized that end-users and societal acceptance are critical to the success of the IoT large-scale pilots. U4IoT combines complementary RRI-SSH expertise encompassing social and economics sciences, communication, crowdsourcing, living labs, co-creative workshops, meetups and persona data protections to actively engage users and citizens in the large-scale pilots.

**Events**

- Adela del-Rio-Ortega became a member of the Steering Committee of the BPM conference series.

- Cristina Cabanillas was chair of the CAiSE Forum 2023 and of the Doctoral Consortium at ICFM 2023.

**Projects**


- **Anti-ALMAN**: Digital Transformation of the Public Administration. ICPM Workshops 2023.

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CURRENT RESEARCH PROJECTS
For 30 years, the Institute of Information Management at the University of St. Gallen (IWI) has been dedicated to applied and design-oriented research at the intersection between business and IT. Prof. Andrea Back, Prof. Ivo Blohm, Prof. Walter Brenner, Prof. Reinhard Jung, Prof. Jan Marco Leimeister, and Prof. Robert Winter are heading six research groups covering research topics ranging from data management and analytics, design thinking, digital service innovation, to privacy and trust. We are excited to share that Prof. Thomas Grisold has joined the University of St. Gallen as an Assistant Professor.

CURRENT COMPETENCE CENTERS AND MULTI-YEAR RESEARCH PROJECTS
The institute pursues a mixed funding approach from both public and private sources. Privately funded research at IWI 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.

- **Agile Transformation**: The Competence Center Agile Transformation offers a unique mix of exchange, collaboration, academic expertise, and advisory services to support the agile transformation of companies. Further information: https://agile.iwi.unisg.ch/

- **Cognitive Automation**: The Competence Center Cognitive Automation combines academic insights and advisory expertise in a platform of exchange and collaboration for practitioners. Members are enabled to seize the vast potential of cognitive automation to improve operational efficiency and effectiveness. https://cognitive.iwi.unisg.ch/

- **Data Management & Analytics Community**: The Data Management & Analytics Community establishes networking between data & analytics leaders from large financial institutions for discussing current issues and workable solutions. https://iwi.unisg.ch/en/projects/dmac/

- **Digital Service Innovation**: Research conducted in the context of 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. https://iwi.unisg.ch/projects/dienstleistungssysteme/

A list of competence centers and current projects can be found at http://www.iwi.unisg.ch/rd=1202

SELECTED PUBLICATIONS

The Business Information Systems team consists of about 40 professors, researchers and Phd candidates that are part of the larger IEBIS department of the University of Twente Faculty of Behavioural, Management and Social Science. The group focuses on digital transformation management, enterprise architectures engineering, and cybersecurity as a managerial challenge as mutually dependent and reinforcing developments in organizations, organizational networks, and markets. With knowledge on these domains, the group participates in the University of Twente business administration, public administration, industrial engineering & management, and business & information technology programs. The IEBIS group has extensive collaborations with multiple other disciplines in the Digital Society Institute. The group applies diverse research methods for achieving valid empirical and design science insights that may contribute to business and organization innovations.

HIGHLIGHT PROJECTS
MSCA Industrial Doctoral Network on Digital Finance for building a European PhD programme on digital finance with research focussing on (coordinator dr. Jörg Osterrieder):
- Towards a European financial data space.

ASSOC. PROF. DR. FOMS WIJNHOVEN
University of Twente, The Netherlands

SELECTED PUBLICATIONS

https://www.utwente.nl/en/bms/iebis/
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 features a wide range of research, from theory to algorithms to applications, with a strong focus on artificial intelligence and data science. Within the Dutch university landscape in computer science, LIACS has positioned itself for AI-LIFE, basically meaning we use models and algorithms of the data and knowledge in computer science. Our collaborations include partners such as Honda Research, Zorginstituut Nederland, Tata Steel, Greenchoice, BMW, KLM, General Electrics Aviation, Young Capital, Quality, Ministry of Foreign Affairs, National Police, Wisonconnect, Stadplan, Naturalis Museum, Royal Dutch Shell, Onencode Institute, Sanquin, and De Nederlandsche Bank.

RESEARCH TOPICS AND COLLABORATIONS
Artificial Intelligence is the major focus of LIACS research. To accomplish a stronger momentum and to exploit synergies among fields, networking initiatives have been established across the faculty of science (Center for computational life sciences, CCLS) and across the entire university (Society Artificial Intelligence and Life Science, SALI). These instruments stimulate collaboration within the university on artificial intelligence topics and bring these topics to new application domains. Moreover, with its participation in European and international research networks ERCIS and CLAIRE, the research in LIACS is integrated in a wider community of researchers.


We have a strong focus on providing collaborative frameworks for Computer Science & Industry, which materializes in long-standing cooperations with industrial partners and governments. These help us to focus on the applicability of research results and at the same time generate new directions for our research in computer science. Our collaborations include partners such as Honda Research, Zorginstituut Nederland, Tata Steel, Greenchoice, BMW, KLM, General Electrics Aviation, Young Capital, Quality, Ministry of Foreign Affairs, National Police, Wisonconnect, Stadplan, Naturalis Museum, Royal Dutch Shell, Onencode Institute, Sanquin, and De Nederlandsche Bank.

CURRENT RESEARCH PROJECTS
- ERASMUS 2022 AID – Providing of Academic Freedom and Inclusion through Digitalization. The AID project aims to create an inclusive environment for students and teachers through an inclusive virtual campus that will be accessible to a wide range of consumers of educational services through digital tools.
- ERASMUS 2023 DigUlni – Digital University – Open European Initiative. The project is initiated to create an inclusive digital educational ecosystem in Ukraine to ensure continuous, high-quality, inclusive, and transparent education, regardless of the student’s location, with the use of existing digital innovations in the field of education and the understandable paradigm of involving future innovations.

EVENTS
- International Conference of Young Scientists and Students “Information technology in the modern world: the research of young scientists”, February 16–17, 2023.
- SELECTED PUBLICATIONS
  Critical infrastructure defense: perspectives from the EU and USA cyber experts / I. Zolotaryova, I. Leray / Naukovi Visnyk National’noho Hirnychoho Universytetu ISSN 2223-2362, 50–53, 2023

SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS (KHNUE) DEPARTMENT OF INFORMATION SYSTEMS


Simon Kuznets Kharkiv National University of Economics (KHNUE), Ukraine


**Introduction**

The Centre for Information Management (CIM) conducts research on topics related to the digitalization of business and society. This is developed from multiple theoretical positions across Information Systems, Knowledge Management and wider Business research. CIM is committed to topical research of high social and business value, and our researchers take pride in being able to develop relevant topics so that they address both academic and practical agendas. Our work on social media analytics through EMOTIVE is very well known and continues to advance. We are also pioneering the development of Security Cybernetics, a dimensionally enlarged view of the implications of digitalization for the safe function of society. CIM has also led the development of the topic of Space Health, focusing on the mental health of astronauts. We have other significant research topics in addition to these, including Digitalization and Social Justice, the role of platforms, the role of identity systems, and issues of machine-learning and modelling in railways systems. CIM has an extensive network of partner organizations and businesses. We are very excited to receive enquiries about our work and collaboration.

**Highlight Project**

- **Digital Decarbonisation**

  “Using our calculations, a typical data-driven business such as insurance, retail or banking, with 100 employees, might generate 2,983 gigabytes of dark data a day. If they were to keep that data for a year, that data would have a similar carbon footprint to flying six times from London to New York.” Jackson and Hodgkinson, 2022.

  The topic of Digital Decarbonisation has been developed by Professor Tom Jackson and Professor Ian Hodgkinson. The implications of this research are of note for all researchers of digitalization as the findings hold significant implications for how organizations conceptualise, utilize and store data. In ‘Dark data is killing the planet – we need digital decarbonisation’, an article for The Conversation, Professors Jackson and Hodgkinson illustrate the environmental cost of the dark data firms generate i.e. data they collect, process and store but only use once or never at all. The volume of dark data has grown as digital transformations have advanced, with organisations seeking to store all data without giving thought to the consequences for the environment. Another concept that is used to describe the problem is that of Redundant, Obsolete or Trivial (ROT) data. Storing ROT in the form of unneeded videos, messages and other files, is a common trend that creates a huge additional drain on national and global energy supply. To illustrate the magnitude of these wasteful digital practices, a recent paper in the Journal of Business Strategy identifies as much as 55% of data stored by organisations may be dark data, while Forbes suggest ROT data in organisations may be as high as 33%. A plausible worst-case scenario is that a staggering 88% of data stored by an organization could be irrelevant. The consequence of storing this data in datacentres is very significant and contributes to an increased CO₂ footprint.

**Key Publications**

- **Jackson, T., Hodgkinson, I., (2022)** ‘Dark data’ is killing the planet – we need digital decarbonisation, The Conversation, September 29, 2022.


[https://www.lboro.ac.uk/departments/sbe/cim](https://www.lboro.ac.uk/departments/sbe/cim)
Our personal members seamlessly integrate with our partner structure. Many of them have already been part of our network for several years, initially associated with one of our partner institutions, before transitioning to a different Higher Education Institution. Nevertheless, they continue to contribute to the network with the same level of dedication exhibited by our institutional members.
PERSONAL MEMBERS

PROF. DR. CHRISTIAN MESKE  
Ruhr-Universität Bochum

PROF. DR. OLIVER MÜLLER  
Paderborn University

ASSOCIATE PROF. DR. STEFANO ZA  
University “G. d’Annunzio” Chieti-Pescara

PROF. DR. IR. HAJO A. REIJERS  
Eindhoven University of Technology

PROF. DR. STEFAN STIEGLITZ  
University of Potsdam

ASSOCIATE PROF. DR. ISABELLA SEEBER  
Grenoble École de Management

PROF. DR. RALF PLATTFAUT  
University of Duisburg-Essen

PROF. DR. JENS POEPPELBUSS  
Ruhr-Universität Bochum

Chair of Business Information Systems and Digital Transformation (SAP-endowed)
The ERCIS network has strong connections to local, national, and international companies working with us on various fields of expertise. Aside from sponsoring the network, the feedback of those companies during regular meetings, round tables, or during one-to-one talks, as well as their inclusion in research projects and studies, ensures that we work on practically relevant topics.
About the company

Business. People. Technology.

Founded in 1997 at the heart of the Ruhr-area, adesso SE is one of the leading IT providers in the German-speaking market. With more than 10,000 employees on 63 sites within the adesso group, we strive to fulfill one simple mission: to help our customers make the most out of their business and the newest technologies. To optimize their core business processes by combining technological competence with sector-specific know-how. Our work is based on strong customer orientation, flexibility and proven methods when implementing software projects. adesso work from diverse fields of expertise in interdisciplinary teams – and they do it with heart and soul in an open, employee-oriented company culture.

We help shape tomorrow’s solutions through our research activities. We deal with the latest technologies on behalf of and with our customers, covering the entire value chain. To do so, we rely on various forms of cooperation in terms of technology, science and research. Our research results benefit both us and our customers.

For further information, please visit www.adesso.de

Topics of interest

- Java
- Javascript
- Microsoft
- Cloud Technologies
- ServiceNow
- PHP
- Google
- Mobile
- SAP

Our sectors/industries

- Automotive
- Banks / Financial services
- Building and Living
- Utilities
- Healthcare
- Retail
- Life Sciences
- Lottery
- Manufacturing Industry
- Media and Entertainment
- Exhibition corporation
- Food and luxury food industry
- Sports
- Public authorities
- Public transportation
- Insurance

Job opportunities

At adesso we are looking for people who are enthusiastic about a job in the following areas:

- Software Development
- IT-Consulting
- Account Management
- Central Services
- User Experience
- Online Marketing

If you are interested in working with an ever-growing first-class employer, please check out our job offers:

www.adesso.de/de/jobs-karriere/unsere-stellenangebote

BISON develops and implements innovative retail ERP and software solutions and has been successfully serving SMEs and large companies in the retail, agricultural and energy trading sectors with a focus on the DACH region for over 40 years.

With our modern solutions, we support our customers in digitalization and in optimizing their business processes along the entire value chain in retail.

Our specialization is the advantage for the retail industry

The standard system of BISON Retail ERP as well as the other Smart Retail Products focus explicitly on the requirements of the retail industry.

Due to this focus, more and more specific functionalities have been and are being integrated into the system or solved with partner applications. BISON Retail, thus covers the required retail functionalities already in the standard.

Individual adaptations are always checked for integration into the standard. In this way, other BISON customers also benefit from the enhancements.

For further information please visit www.bison-group.com

Modern ERP

Trade specific
Tried and tested
Releaseable

For more information, please visit

www.adesso.de/de/technologien/technologie-radar/index.jsp

For further information please visit

www.ercis.org

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ABOUT THE COMPANY
What started in 1913 with the manufacture of powerful straw binders has become one of the world’s leaders in the production of agricultural technology. The company is well-known for its highest quality standards, leading technologies as well as their market leaderships in combines and self-propelled harvesters, Machine-to-machine communication, intelligent networking, the improvement of the harvesting process as a whole – industry 4.0 is already the company’s reality and sustainability is its principle.

CLAAS products ensure efficiency in agricultural production and they go easy on the environment and sustainability is its principle. Our success is the result of a well-balanced team of outstanding people from all professions, who make their daily contribution to feeding the world.

TOPICS OF INTEREST
- Connected machines
- Farming 4.0
- Omni-channel customer experience
- Precision Farming
- Data Management
- Big data & AI/ML Engineering
- Autonomy

CLAAS Inside Corporate IT –
Connected Machines
Application Integration
Data Center & Cloud
Network Security Specialist (m/w/d)
IT Client Specialist (m/w/d)
Selected vacancies in Germany for students:
- CLAAS Inside Corporate IT – SAP Development
- CLAAS Inside Learning Solutions
- CLAAS Inside Corporate IT – Application Integration

If you have any questions about our current international vacancies, our contacts at the respective locations are happy to help.

CLINICAL + BUSINESS SOLUTIONS

SAP Development
Data Center & Cloud
Network Security Specialist (m/w/d)
IT Client Specialist (m/w/d)
Selected vacancies in Germany for professionals:
- Solution Owner (m/w/d)
- Autonomy AI Framework
- IT Security Specialist (m/w/d)
- Data Center & Cloud
- Network Security Specialist (m/w/d)
- IT Client Specialist (m/w/d)

Today the harvest chain is seeing many innovations coming through, especially in drive technology, machine intelligence and networking. “Efficient Agriculture Systems”, abbreviated as “EASY”, is the CLAAS collective term, which encompasses machine control and performance optimization, steering systems, precision farming and monitoring, software solutions and services. However, digital transformation has changed much more than just the technology of our machines. New product features, different license models and data driven business models require our business unit for sales and service to reinvent our traditional way of doing business.

At CLAAS, we are striving to digitize all traditional customer touchpoints for each and every farmer. Our online and offline world is emerging into one Omni-channel customer experience. CLAAS is heavily investing in its digital future. In addition to the development center for electronics on the machines in Dissen, massive investments are being made in the customer and dealer systems. As an example CLAAS connects, as the holistic digital touchpoint, delivers integrated functionalities, services and shops to their customers in order to link the customer’s processes seamlessly with ours.

To further centralize sales processes, as well as dealer and customers systems we’ve created a new location – the CLAAS Campus Herzebrock. The well-known positive customer experience from our physical dealer touchpoints will be ensured for our digital touchpoints through the integration of state-of-the-art systems e.g. Salesforce, SAP hana, Tableau and modern IT architectures. This modern IT landscape also enables us to generate new solutions for internal processes and our customers based on data and with the use of AI. These are intended to support us in improving our products and increasing availability. Our data analytics team works closely with all departments to find new opportunities for the use of AI.

JOBS OPPORTUNITIES
CLAAS is special because it is a family-owned enterprise with a long-term, forward-looking approach which is based on the commitment of its employees. At CLAAS, you will face the challenging task of continuously improving harvesting performance through innovative technology.

We actively contribute to the success of the energy transition in Germany, Austria and Switzerland. With more than 350 permanent consultants in 8 locations, we are the largest independent SAP consultancy for the utilities industry.

We are looking for talents:
- Junior IT consultant
- Junior RPA developer
- Junior app developer
- Junior cloud developer
- Junior ERP consultant
- Working Student
- Bachelor/Master-Thesis

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www.cronos.de/campus
www.cronosgewerden.de

Think outside the box - especially in IT! Driven by innovative and creative young people, digitalization is accelerating the development of new technologies and challenges. Giving young professionals the freedom to explore ideas and take on more responsibility is part of our credo. We maintain a strong academic network and offer attractive programs for students and graduates. Our regular workshops, graduate programs and comprehensive onboarding system help launch careers in IT development and consulting.

FIND OUT MORE ABOUT OUR STUDENT AND GRADUATE PROGRAMS:

- Bachelor-/Master-Thesis
- Junior cloud developer
- Junior app developer
- Junior cloud developer
- Junior ERP consultant
- Working Student
- Bachelor/Master-Thesis

www.cronos.de/campus
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Job opportunities
- 30 years of experience
- 1000+ successful projects
- 200+ active customers
- market leader as biggest independent

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FACTS
- market leader as biggest independent
- IT consultancy for the utility sector
- 350+ consultants
- 200+ active customers
- 1000+ successful projects
- 30 years of experience
- SAP Partner Energy of the year 2020, 2021 and 2022
- SAP HANA process automation
- CRM
- SAP Customer Experience
- analytics
- online marketing
- HTML, JAVA
- SAP BTP
- SAP Fiori
- Machine Learning
- strategy consulting
- AI
- SAP UUS
- Celonis Process Mining
- Robotic Process Automation

About the company
With a pioneering spirit and a startup attitude, cronos was founded in 1991 in Münster, Germany. Our core consulting areas are IT and process optimization for utility companies. We support our customers in the process of digitalization and the development of new business fields. In 2020, 2021 and 2022, the company received SAP Partner Energy of the year, SAP HANA process automation, CRM and SAP Customer Experience awards.

Cronos is an independent IT consultancy for the utility sector with headquarters in Münster and Stuttgart. With more than 350 permanent consultants in Germany, Austria and Switzerland, Cronos is the largest independent SAP consultancy for the utilities industry in the GSA. Our success is the result of a well-balanced team of young and experienced IT specialists who are among the most sought-after consultants in the 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

- Digitising and consolidating medical records including electronic and digitized documents
- Certified service portfolio “Archivar 4.0”
- Over 1,400 clients, approx. 1,700 employees at 24 locations in Germany
- Interoperable IT architectures based on current standards
- Audit-proof digital archiving for compliance
- Deep integration of archived documents into administrative and clinical work-flows 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 organisation of roughly 1,200 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 optimisation 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 Leining near Leipzig (Saxony) 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 IT, information systems, IT, software development) for innovation in documentation and archiving enabled by state-of-the-art IT and by digital transformation.

EUCON GROUP

Eucnon is one of the companies demonstrating foresight in challenging times. The digital pioneer has a track record of more than 25 years of successfully supporting digital transformation in the automotive, insurance, and real estate industries.

A major factor in the success of the expert for data-driven decision-making and process intelligence is its focus on implementation. Eucnon is convinced that it is not merely a matter of generating ideas, but above all transforming them into marketable products. Therefore, products are jointly developed in close cooperation and constant exchange with our B2B customers. At the heart of all products is the objective to turn data into actionable insights and cater customer needs for ever greater automation of processes. This inspires enthusiasm to embrace change, but above all generates added value for our customers.

EUCON GROUP

Eucnon develops data-driven solutions based on technologies such as Artificial Intelligence and Robotic Process Automation. In total, more than 500 employees work for the Eucnon Group worldwide. Around 250 customers from over 80 countries already rely on the products of the innovation leader around the global automotive aftermarket, the insurance claims process and real estate management.

In the automotive aftermarket, Eucnon is a leading international provider of market information and data-based solutions for the product management of parts manufacturers. The systems are used by both original equipment manufacturers and automotive suppliers who seek to define and improve their after-sales strategy using data-driven processes.

In the insurance industry, Eucnon implements solutions to analyze, automate, and accelerate the entire claims process, from claims reporting to AI-supported verification, control, and automated processing to final negotiation. With its aggregated product, Eucnon enables significantly simpler and faster processes, cost benefits, and higher productivity for insurers.

For real estate companies and corporate real estate managers, Eucnon offers a platform for data-driven property management. The use of various quality-assured sources thereby enables fact-based real estate management. The central data platform creates added value by paving the way to a digital twin of the building, especially in terms of consumption and a full cost overview. This enables companies to make informed investment decisions and increase building profitability. At the same time, rapid efficiency gains are achieved in voice processing and internal and external cost control is improved.

EUCON GROUP

If you are keen on further developing your talents and becoming a digital trailblazer, Eucnon is the right choice for you, whether you are a student, graduate or expert! We would like to get to know you and look forward to your application or a casual first contact. Possibilities to join the company in Münster or remote:

- (Junior) Software Developer (m/f/d)
- (Junior) Data Scientist (m/f/d)
- DevOps Engineer (m/f/d)
- Junior Product Manager (m/f/d)

We also mentor bachelor’s and master’s theses in various areas and are regularly looking for interns and working students.

CONTACT

Dr. Jens Brunk
Technical Lead Data
jens.brunk@eucnon.com

Vanessa Solic
HR Manager Recruiting
vanessa.solic@eucnon.com

For more information, visit us at www.eucnon.com/jobs or follow us on www.linkedin.com/company/eucnon-group

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Mobile: +49 153 40798718
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For more information, visit us at www.eucnon.com/jobs or follow us on www.linkedin.com/company/eucnon-group
ABOUT THE COMPANY
For the sixth time in the past 11 years, Hilti has been named one of the best employers by Great Place to Work. What began as a family business in 1941, founded by brothers Eugene and Martin Hilti, has become a leading industry player with over 120 locations worldwide and a workforce of more than 33,000 colleagues. Our incredible journey, from humble beginnings to a global powerhouse, is a shining example of the rewards of a hard-working and dedicated team.

At Hilti, we provide leading-edge tools, technologies, software, and services for the global construction industry and beyond. Our purpose is making construction better based on a passionate and inclusive global team and a caring and performance-oriented culture.

We invest a substantial amount of our annual profit to the Hilti Foundation, which focuses on initiatives that empower people to live independently and autonomously, contribute to building stronger societies, and create networks of competent professionals to achieve sustainable and scalable impact.

Hilti stands for quality, innovation, and direct customer relationships, resulting in about 280,000 individual customer contacts each day. Many ideas for improvements are developed directly on construction sites while talking to customers. This is why the company invests approximately 7 percent of sales each year in research and development. We run our own research and design labs, working with top technical universities and partners all over the world.

ABOUT GLOBAL IT IN HILTI
Hilti’s IT team is a globally diverse group with major hubs in Switzerland, Malaysia, and the USA. Each location boasts a highly skilled team that collaborates closely to achieve success. Known for their commitment to sustainable value creation, Hilti’s IT experts are dedicated to utilizing the latest technological innovations to deliver value-adding solutions and services.

TOPICS OF INTEREST
• Business applications – where we run a fully consolidated global SAP S/4 HANA system landscape.
• Digital workplace – where we connect our 33,000 Hilti people and make them an information-enabled team.
• Cloud application platform – where we build our common platform for all digital and software offerings to our customers.
• Enterprise computing – where we design, build, and operate our network and computing capabilities.

Our Global IT roles range from data analysts, project managers, and system engineers to cybersecurity experts, user experience designers and enterprise architects.

JOB OPPORTUNITIES IN OUR STRATEGIC IT OFFICE IN BUCHS, SWITZERLAND:
• Interns or thesis students
• Hilti Fellowship program (in cooperation with University of Liechtenstein)
• Graduate positions

Take a look at the open positions on https://careers.hilti.group or get in touch with us directly.

ABOUT THE COMPANY
We combine a methodical approach, technical support and considerable process expertise with new ideas. This integrated approach helps to achieve success in process management. The PICTURE GmbH is a spin-off of the University of Münster, founded in 2007 by Lars Algermissen and Thorsten Falk. In the ERCIS network we stay connected with the university and still benefit from a transfer of knowledge. The core business segment of the PICTURE GmbH is process consulting, process analysis and organizational design. The PICTURE GmbH is a consulting firm as well as a software company with consultants and developers specialized in process consulting. The company is well known for the PICTURE method and the PICTURE platform, which in combination allow describing, analyzing and optimizing business processes within organizations.

THE PICTURE METHOD –
Easy, effective, efficient.
Based upon 24 semantic building blocks, they allow the construction of BPMN 2.0 process models for administrative processes in a quick and easily understandable way.

This method of process modelling lays the foundation for extensive business process reengineering, as it offers a target-oriented and efficient way to analyze the elements of a company’s organizational structure and business procedures.

THE PICTURE PLATFORM
The PICTURE method is embedded in the web-based PICTURE platform. This platform serves to support process management within organizations as well as between different levels of the state. The PICTURE platform is tailored to the special needs of organizations and aims to provide a vivid, precise and easily understood methodology to improve through customized processes.

Visit our website www.picture-gmbh.de

TOPOGRAPHY 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
• Reorganisation

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• Graduate positions

Take a look at the open positions on https://careers.hilti.group or get in touch with us directly.
The Provinzial Group is the second largest public insurance group in Germany. We are an insurer and employer in the region with social responsibility. With 12,000 employees in various professional groups, we inspire our customers with security and reliability.

For more than 300 years, we are where our customers are. Today, more than five million private and corporate customers place their trust in us. What makes us special is our regionality and proximity. Our advisors are not more than a few minutes away and can also be reached through our many digital channels at any time.

Headquartered in Münster, the Provinzial Holding AG comprises four regional indemnity and casualty insurers as well as two life insurers with head offices in Münster, Düsseldorf, Kiel, Hamburg and Detmold.

Our IT department is a full-service provider for the Provinzial Group. We focus on:
- Business Process Management and Automation
- Data Analytics and Artificial Intelligence
- IT Security and Governance
- Enterprise Architecture
- Software Engineering
- Digital Transformation and Innovation
- Insurance and Financial Services
- Risk Management

Job and cooperation opportunities
We regularly search Java developers, business analysts, IT architects and IT infrastructure specialists. We offer direct entry, trainee programs, internships as well as working student activities. You can also write your Bachelor or Master thesis with us, and we are open for research and development cooperations, co-creation, guest lectures or joint courses. Just get in touch with us.

Contact
Communicate directly:
it-perspektiven@provinzial.de

Get more information:
www.provinzial.de/kARRIERE

or follow us on:

About the company
SAP’s strategy is to help every business run as an intelligent, sustainable enterprise. As a market leader in enterprise application software, we help companies of all sizes and in all industries run at their best: SAP customers generate 87% of total global commerce. Our machine learning, Internet of Things (IoT), and advanced analytics technologies help turn customers’ businesses into intelligent enterprises. SAP helps give people and organizations deep business insight and fosters collaboration that helps them stay ahead of their competition. We simplify technology for companies so they can consume our software the way they want – without disruption. Our end-to-end suite of applications and services enables business and public customers across 25 industries globally to operate profitably, adapt continuously, and make a difference. With a global network of customers, partners, employees, and thought leaders, SAP helps the world run better and improve people’s lives.

For more information, visit
www.sap.com

Topics of interest
- Business Technology Platform
- Database & Data Management
- Intelligent Technologies
- Application Development
- Predictive Analytics
- Artificial Intelligence / Machine Learning
- Blockchain
- Cyber Security / Quantum Technologies
- Intelligent Suite
- Business AI
- Digital Supply Chain
- Industry 4.0 / IoT
- Employee Experience Management
- Sustainable Enterprises / Sustainability
- Footprint Management

Job opportunities
At SAP, we grow, we lead, we innovate. As colleagues, we support, challenge, and inspire one another every day. Whether connecting global industries, people, or platforms, we help ensure every challenge gets the solution it deserves. We build breakthroughs, together.

For more information, visit
jobs.sap.com

Topics of interest
- Application Development
- Software Engineering
- Digitale Transformation und Innovation
- Business Architecture
- Software Engineering
- Digital Transformation and Innovation
- Insurance and Financial Services
- Risk Management

Selected activities
Advanced data provision by Datenservice+ GmbH (DS+) emerged as a fully-owned subsidiary in June 2023 from the Provinzial company, stemming from the success of a mapping application developed as part of a project aimed at generating insurance quotes for residential buildings. With its API, DS+ provides – with more than 56 million buildings – the most comprehensive building information for Germany. With an initial team of six employees, DS+ is set to broaden its scope, extending its services to provide comprehensive information regarding buildings and their respective environments not only to insurance companies but also to various industries. (www.datenservice.plus)

Funding for Female Founders
In the course of 2023’s Startup Week Düsseldorf, Provinzial invited female founders to pitch their companies and desired areas of growth. The collaborative jury consisting of representatives from InsurLab Germany, InsurTech Hub Munich, Crossbuilders, nushu founder Mely Schütte and employees of Provinzial awarded the prize of 20,000 euros to the founders of littleplan, who prevailed against five other teams of founders. Littleplan supports first aid for children with nursery posters and pram accessories. The founders have received an award from the Björn Steiger Foundation and are now represented with their products in the dm online shop. A continuation of the format is planned for 2024.
ABOUT THE COMPANY

With 575,000 employees in 32 different countries, the Schwarz Group is among the top retail groups in the world. Based in Neckarsulm, Baden-Württemberg, Germany, the pillars in food retailing are Lidl and Kaufland. Furthermore the Schwarz Production is active in food production and PreZero in the area of environmental services. This makes the Schwarz Group one of only a few retail groups to cover the entire value cycle, from production and retail to disposal and recycling. Schwarz Digits as IT and digital division offers compelling products and services, which comply with Germany’s strict data protection standards.

By continuously considering current technological developments, Schwarz IT identifies innovative courses of action. In close cooperation with the departments, Schwarz IT develops professional, efficient IT solutions. In total, Schwarz IT is responsible for IT at more than 13,700 locations throughout the Schwarz Group in 32 countries en-route to “Trading 4.0”.

The guiding principles of the Schwarz IT are enthusiasm for innovation, proximity to people and understanding the business. As a leading technology partner, the Schwarz IT is the digital heartbeat of the Schwarz Group; efficient, fast and flexible.

TOPICS OF INTEREST


JOB OPPORTUNITIES

In a wide range of exciting tasks and global projects, employees work in a dedicated, independent and cheerful way towards providing optimum business support to Europe’s largest retail company in terms of assisting global business processes, and designing, developing and rolling out systems. Furthermore, they ensure a highly available IT system and application landscape as well as ultra-modern, high-end technologies.

Schwarz IT – more than you might think!

Find out about attractive job offers at www.it.schwarz

Schwarz IT is the digital heartbeat of the Schwarz Group and is among the top retailers worldwide with annual sales of over 154.1 billion euros. The digitization of the world offers many previously unimaginable possibilities for the further development of existing business models and for the establishment of completely new concepts. For this to succeed, we create the decisive technological prerequisites.

The Schwarz IT secures the diverse, global daily business of the Schwarz Group. Through the forward-looking development of innovative solutions, the Schwarz IT enables new business ideas to be put into practice.

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Viadee GmbH is a German IT Company with more than 200 tech-interested employees including our interns. 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 and Dortmund. We focus a regional customer base in North-Rhine Westphalia. 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. This contributes to our flexibility, family lives as well as to our CO₂ footprints.

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

TOPICS OF INTEREST

We share a passion of technological and methodical expertise. Keeping up to date with the ever-changing world of IT, there are various opportunities to grow within viadee.

Bringing BPMN (business process model notation) models to life is currently one of our core activities. Prominent mention should be given to our Open Source contributions on GitHub, as well as our contribution BPMN-Modeler on the Atlassian Marketplace. Work often is organized in agile projects leveraging Java or Cloud-based technologies. Be it newest technologies like Quarkus and Micronaut or Spring Boot, or established practices like WSDL or REST. Java and SAS have accompanied us through almost all our company history and with most customers. However, we emphasize our undogmatic view on technologies and methods and use whatever is appropriate, such as Python and R in the Data Science domain.

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 a tool developed here called mateo, the viadee test automation and RPA framework: An opportunity to create cross-platform integrate BPMN models to life is currently one of our core activities. Prominent mention should be given to our Open Source contributions on GitHub, as well as our contribution BPMN-Modeler on the Atlassian Marketplace. Work often is organized in agile projects leveraging Java or Cloud-based technologies, be it newest technologies like Quarkus and Micronaut or Spring Boot, or established practices like WSDL or REST. Java and SAS have accompanied us through almost all our company history and with most customers. However, we emphasize our undogmatic view on technologies and methods and use whatever is appropriate, such as Python and R in the Data Science domain.

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Areas of expertise and consulting products, such as these, are invented and supported like internal start-ups by using lean methods.

Employees contribute their topics of interest as part of our research and development activities. Right now, this is happening with IT-Security, Cloud Architecture, Process Mining, Agile Leadership, ML-Apps, and several other topics.

JOB OPPORTUNITIES

Interested in our topics and ready to take the next step? If you see yourself in a technical role, while being open and interested in the social components of everyday business life, we would love to welcome you on board.

IT Consultants for
- Software Engineering
- BPM & Software Architecture
- Data Science & BI

To find out about our benefits and further job listings make sure to visit our website www.viadee.de/karriere.

For a closer look at our field of interest, you are invited to follow along at blog.viadee.de – a blog to which every employee can add content.

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**Westfalen**

**Mobility**
With around 260 stations, the Westfalen Group has the largest branded-independent filling station network in Germany, primarily in North-Rhine Westphalia and Lower Saxony. Westfalen is actively helping to shape the mobility transition and is increasingly focusing on future fit energy carriers: its product portfolio already includes charging power from 100% green electricity, hydrogen, and a prospective switch from LNG to Bio-LNG and the offer of Bio-CNG.

**Respiratory Homecare**
Westfalen offers innovative equipment technologies and services in the fields of oxygen, sleep, nebulizer and ventilation therapy as well as secretion management, and its commitment contributes to a significant improvement in the quality of life of the people supplied.

**A family owned company**
The Fritsch-Albert family ensures continuity behind the company guarantees a stable ownership structure and stands for generation- and value-oriented thinking.

**Sustainability**
The Westfalen Group has defined six fields of action in which the family-owned company is focussing upon sustainability. In addition to the aim of being an attractive employer and increasing transparency in the supply chain, Westfalen would like to help itself and in particular its customers to act in a more sustainable way. Westfalen’s locations in Germany are certified according to ISO 14.001 and the electricity-intensive locations according to ISO 50.001. Since the beginning of 2022, all Westfalen filling plants in Germany have been powered by green electricity. At the same time, Westfalen is developing future fit business models and wants to actively contribute to the energy transition by investing in sustainable drive energies such as Bio-CNG, Bio-LNG, hydrogen and e-mobility. Westfalen has set itself the goal of significantly expanding its hydrogen activities in the coming years and establishing itself as the preferred partner for European SMEs in the decentralized production and delivery of green hydrogen. This includes expanding the network of mobile and stationary hydrogen filling stations, primarily for refueling commercial vehicles. With the acquisition of the NGC.Tec Group, Westfalen has also significantly strengthened its position in the field of electrically-based heat in 2023.

**Topics of Interest**
- Industry 4.0
- IoT in Logistics
- Data Analytics and Machine Learning
- Several initiatives for AI
- Mobile Solutions
- Business Process Excellence
- Digital business models

**Job Opportunities**
If you are interested in working with great people at the Westfalen Group, take a look at our website:
https://www.westfalen.com/de/de/unternehmen-jobs/jobs-karriere

**Industrial Gases & Services**
The Westfalen Group produces and sells more than 300 technical gases and gas mixtures for virtually all applications in industry and the trades, food production, laboratories, pharmaceuticals and medicine. These include the air gases nitrogen, oxygen and argon, which are produced in three of the company’s own air separation plants, as well as acetylene and hydrogen. Refrigerants and heat transfer media for cooling and air-conditioning technology complete the extensive product range.

**Energy Solutions**
With its Westfalengas brand, the Westfalen Group is one of Germany’s leading suppliers of liquefied gas. Westfalengas is suitable for more than 2,000 applications: as off-grid thermal energy for heating private homes, factory buildings and agricultural buildings, for thermal processes in industry and commerce, and as environmentally friendly energy carrier for cars or forklifts. Since mid-2023, Westfalen has been adding heat pumps to its range of heating solutions.

**ABOUT THE COMPANY**
100 years of expertise: The Westfalen Group is active in the fields of technical gases, refrigeration and heating, service stations and mobility, and respiratory home therapy. With its products and services, the company is increasingly offering solutions that help customers become more sustainable. Hydrogen as an energy carrier is playing an important role in more and more areas. Founded in Münster in 1923, the family-owned company is now represented by numerous subsidiaries and affiliates at over 20 production sites in Germany, the Netherlands, Belgium, France, Switzerland and Austria. In the fiscal year 2022, sales of around 2.3 billion euros were generated about the company.

**Austria**
In the fiscal year 2022, sales of around 2.3 billion euros were generated around the company. Between 2018 and 2022, around 50.001. Since the beginning of 2022, all Westfalen filling plants in Germany have been powered by green electricity. At the same time, Westfalen is developing future fit business models and wants to actively contribute to the energy transition by investing in sustainable drive energies such as Bio-CNG, Bio-LNG, hydrogen and e-mobility. Westfalen has set itself the goal of significantly expanding its hydrogen activities in the coming years and establishing itself as the preferred partner for European SMEs in the decentralized production and delivery of green hydrogen. This includes expanding the network of mobile and stationary hydrogen filling stations, primarily for refueling commercial vehicles. With the acquisition of the NGC.Tec Group, Westfalen has also significantly strengthened its position in the field of electrically-based heat in 2023.

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**Sever MOON, WE’LL HELP YOU LAND AMONG THE STARS.**

Take yourself and your IT consulting expertise to the next level. Apply now.
#shapespaces
The ERCIS network bundles certain areas of expertise in several competence centers. Competence centers are multi- and interdisciplinary consortia consisting of partner institutions from research as well as from practice to focus on distinct topics.
CONCEPTUAL MODELING

The Competence Center for Conceptual Modeling focuses on the development of novel methodologies, providing automatic support for the design, enactment and analysis of process models in different business domains. Our research is mainly based on formalisms, models and algorithms from graph theory, machine learning, propositional logic, natural language processing, ontologies, and software engineering.

RESEARCH

- Business Rules Management: Decla-tive Process Models consist of so-called business rules that are used to control the execution of business processes. Other than imperative process models, they allow any process execution as long as the rules are complied with. Business rules are often maintained in repositories as part of process-aware application systems. An important task of Business Rules Management is to maintain said repositories in coordination with running process instances in order to cope with inconsistencies, for instance. In our new research project “Predictive and Interactive Management of Potential Inconsistencies in Business Rules (MiB)”, we will focus on the prediction of inconsistencies based on currently running process instances and on proactively avoiding them also considering human-in-the-loop approaches. The project will start in January 2024 and will be funded for three years by the German Research Foundation (DFG, DE 1983/9-3).

- Social Process Mining and Prediction: Traditional Process Mining focuses on highly structured processes as they are typically executed in enterprise systems or semi-structured processes, which are supported, for instance, by case handling systems. A new research field in Process Mining, which we initiated with our research project “Social Process Mining (SPM)”, focuses on unstructured processes as we find them in Enterprise Social Software (ESS). The goal of the SPM-project, which is funded for three years by the German Research Foundation (DFG, DE 1983/12-2), is to develop Process Mining algorithms that consider the special character of unstructured ESS processes and to apply them on large ESS log data to automatically detect typical collaboration scenarios in ESS. Recently, we acquired a new research project in this field, which focuses on the prediction of unstructured processes. It will be funded for three years by the Rhineland-Palatinate Research Ministry for three years, starting in January 2024.

- Process Modeling Recommender Systems: Recommender Systems provide automatic support for process models by recommending next and/or previous process flow and annotation elements during the modeling process. The recommendation is made based on the information found in the process modeled so far and based on a repository of process models and/or process ontologies commonly used in the domain. To calculate recommendations, we make use of ML methods that were transferred from the field of Predictive Process Monitoring. To avoid ambiguities in the naming of process elements, we use terminological standardization based on Natural Language Processing (NLP). A corresponding research project “Supporting Business Process Modeling through Pattern-based Recommender Systems (ProPoneRe)”, which we currently work on, is funded for two years by the German Research Foundation (DFG, DE 1983/12-2).

- Process Modeling Recommmender Systems: Recommender Systems provide automatic support for process models by recommending next and/or previous process flow and annotation elements during the modeling process. The recommendation is made based on the information found in the process modeled so far and based on a repository of process models and/or process ontologies commonly used in the domain. To calculate recommendations, we make use of ML methods that were transferred from the field of Predictive Process Monitoring. To avoid ambiguities in the naming of process elements, we use terminological standardization based on Natural Language Processing (NLP). A corresponding research project “Supporting Business Process Modeling through Pattern-based Recommender Systems (ProPoneRe)”, which we currently work on, is funded for two years by the German Research Foundation (DFG, DE 1983/12-2).

- Cognitive Aspects of Knowledge Representation (CARK) is funded for two years by the German Research Foundation (DFG, DE 1983/11-1). The goal of the CARK-project, which is funded for two years by the German Research Foundation (DFG, DE 1983/11-1), is to develop Cognitive Aspects of Knowledge Representation (CARK) which will focus on the prediction of inconsistencies based on currently running process instances and on proactively avoiding them also considering human-in-the-loop approaches. The project will start in January 2024 and will be funded for three years by the Rhineland-Palatinate Research Ministry for three years, starting in January 2024.

- Predictive Process Monitoring: Predictive Process Monitoring (PPM) is used to learn the structure and behavior of a business process automatically from log files of business software and predict the future behavior of currently running process instances. The prediction results can be used to proactively influence process instances, for instance, to assure beneficial behavior and avoid unfavorable one. Currently, we are working on our research project “Context-aware Predictive Process Analytics”, which is funded by the German Research Foundation (DFG, DE 1983/13-1) for 2½ years, and which has started in November 2022. The project involves ECRCIS partners from the universities of Erlangen-Nuremberg and Koblenz.
The Competence Center for Crisis Management (C³M) integrates the research efforts of the ERCIS network in the domain of crisis management (CM) and humanitarian logistics. Our main objective is to identify relevant challenges in practitioner realities and to design appropriate socio-technical solutions. C³M integrates a collaborating network of different practitioners and research organisations from the CM and humanitarian logistics domain.

CURRENT RESEARCH PROJECTS

The C³M team is looking back at a busy but highly productive year 2023. In June, our project "BISKIT: Blood Information System for Crisis Intervention and Management", funded by the Federal Ministry of Education and Research, ended with an exciting final meeting at the University of Darmstadt. We were happy to present the developed multi-method simulation environment, our findings on integrated optimizations, and several improved enterprise architectures of the involved practitioner organizations, the South African National Blood Service and National Blood Service Ghana. We have truly enjoyed the great international and interdisciplinary collaboration and new learnings, which led to several interesting follow-up activities. One exciting activity which was already undertaken: We have successfully organized a project seminar with the blood transfusion service of German Red Cross (DKK-Blutspendedienst West), where new opportunities through informatics systems and sourcing strategies to increase donations and to reach new donors were investigated.

We also made good progress in our collaborative research project "DigiCBA: Responsible Use of Digital Cash-Based Assistance", funded by the Research Council in Norway and led by our ERCIS partners from the University of Agder. The project objective is to design, develop, and evaluate evidence-based frameworks to support selecting and using the most suitable digital technologies for delivering cash-based assistance (CBA) to refugees. This objective not only perfectly matches our past and ongoing research on humanitarian logistics but also leads to a stronger integration of ERCIS partners in the C³M. In 2023, the project entered its second year. In addition to regular meetings between all participating institutions, interviews were conducted, and workshops were held in refugee shelters in Uganda. Moreover, as part of the project, we were happy to host Ms. Sajideh Dehghan for two months as a visiting scholar from Yazd University, Iran. The various project activities resulted in a publication in the International Journal of Disaster Risk Reduction.

Two out of four ongoing projects were concluded in the area of epidemics modelling. In the DFG-funded project Spaceimpact, we have contributed to forecast COVID-19 caseloads in Germany at a highly regional level using the EpiPredict simulation platform. The EpiPredict platform was developed in a former research project and is a testbed to evaluate non-pharmaceutical intervention strategies for a deeper understanding of infection dynamics. Besides, our H2020-funded demonstration project "STAMINA: Demonstration of Intelligent Decision Support for Pandemic Crisis Prediction and Management within and across European Borders" ended in February with the finalization of twelve European trials, in which different pandemic management innovations were evaluated. Our contribution was centered around adjusting and applying the Trial Guidance Methodology (4E TGM.ERCIS.ORG) to evaluate several innovative pandemic management solutions.

At the same time, our two interlinked and epidemic-related research projects, funded by the Federal Ministry of Education and Research, entered in February during the finalization of twelve European trials, in which different pandemic management innovations were evaluated. Our contribution was centered around adjusting and applying the Trial Guidance Methodology (4E TGM.ERCIS.ORG) to evaluate several innovative pandemic management solutions.

We very much appreciated the great collaboration with the large and standing new partners and would like to end with two amazing news. We are very proud of our team member Sebastian Henke, who was granted with the best student research paper at the 26th annual ISCRAM conference in Omaha, USA! And, on top of this, we are very honored to announce that the 21st ISCRAM conference is coming to Münster, Germany, from May 25th to 27th. The C³M will join forces with the State Fire Service Institute North Rhine-Westphalia to host the conference, embodying a pracademic approach. Please visit the conference website for information: iscram2023.ercis.org. We will be happy to welcome you in Münster and explore further opportunities how ERCIS can even more contribute to ISCRAM research!
Digital transformation is challenging for most firms who struggle with effectively understanding the opportunities and consequences of digitalization to their business and how they should transform. This struggle is especially true for small- and medium-size enterprises, who may not have the financial resources needed to source the capabilities for managing this transformation.

The competence centres of the ERCIS net-works are programs of varying lengths, established to promote research and learning activities into areas of concern, like this competence centre Digital Transformation Management for SMEs. These programs live for as long as needed. In a progressing faster changing world, with the added threats coming from global warming and energy crisis, global social crisis, and at the same time, the new opportunities coming from new technologies like generative artificial intelligence, we feel that there is still a need for such a competence centre.

A core group consisting of prof. Isabel Ramos, Universidade of Minho, prof. Stefano Za, University of Bari, and assoc. prof. Niels Garmann-Johnsen, University of Agder, have for some time been planning or an international summer school, linked to promoting a sustainable green wine industry, a case that can provide insight into how SME businesses can become more sustainable and resource efficient in general, using digital means.

The first summer school is planned in the Porto region, in the summer of 2022, aimed at Ph.D. candidates and master students.

**DTM for SMEs**

**PROJECTS AND ACTIVITIES**

Here we will highlight some of the competence centres activities: two new research streams, and last but not least, the new summer school!

**New BPM capabilities for SMEs**

In research, and an article named “Conceptualizing Business Process Management Capabilities in Digitalization Contexts” presented at the 2023 CENTERIS conference (Porto, Nov. 2023), the authors (Ekkebrokk, Olsen and Garmann-Johnsen) address a gap in the business process management literature (BPM) regarding the capabilities needed for interacting with actors outside of the organization as drivers for process innovation. We describe capabilities for process management in contexts when digitalization involves actors outside of the organization. In our answer to closing this competence gap, we conceptualize activities related to business network co-creation to be covered in a proposed new BPM capability.

The Tripple bottom line co-creation business canvas

One of the areas where SMEs may benefit from collaboration and co-creation new joint value propositions to users and customers are linked to more sustainable value chains and networks. By adopting digital technologies, SMEs can potentially improve their financial performance by increasing efficiency, reducing costs, and reaching new markets. For small and medium-sized enterprises (SMEs), such investments can be particularly challenging due to their limited resources and reliance on external cooperation. As a result, many successful SMEs have opted to collaborate with other companies to co-create digital assets. Digital transformation can also have social and environmental impacts, both positive and negative. By considering social and environmental impacts alongside financial performance, SMEs can identify and address potential risks and opportunities, and develop strategies that balance the three dimensions of the Triple Bottom Line. This concept refers to the idea that enterprises should not only focus on financial profits but also on social and environmental impact, combining “people, planet and profit”. To address this gap, the authors (Garmann-Johnsen, Ekkebrokk and Olsen) have developed a conceptual model of a Triple Bottom Line co-creation canvas based on a review of the literature and real-life co-creation cases. This canvas can be a valuable tool for SMEs looking to better understand how to approach co-creation in their industry that takes corporate sustainability into account (Fig. 1).

**Digital Transformation of the Wine Industry**

In September, the first Zoom meeting (Niels Garmann-Johnsen, Stefano Za, Isabel Ramos) was held to prepare the summer school aimed at master’s students and focused on the digital transformation of the wine industry. A draft program was presented at the CENTERIS conference, 2023, and demonstrating its potential use, involved a consortium of bigger and smaller ICT-companies collaborating to mitigate the problem of cognitive impairments in the aging population through the use of Artificial intelligence. This project plans to record and analyse speech from individuals and adapt it to translate later diminished speech. The societal effect of this project is contributing to better quality of life for elderly with cognitive impairment, and a reduction in the cost of care for the elderly or other individuals with reduced speech. There is also an environmental value proposition in better utilization of scarce resources (Fig. 2).

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[https://ccdt.ercis.org/](https://ccdt.ercis.org/)

Other contributions? Please send us information (see contact details!) and we can post it at our website ccdt.ercis.org!
The E-Government Competence Center unites members within the ERCIS network who are focused on digitalization in the public sector. Our research encompasses a wide range, from individuals’ utilization of e-government technology to e-participation and process management.

Future Digital Towns

The Future Digital Towns research group, funded by the German Research Council (DFG), explores how mid-sized cities (towns) tackle digitalization challenges and develops digital tools to enhance their livability. The project focuses on four key areas: government & administration, economy, labor & energy, civil society & social services, and education & culture.

In six sub-projects, the group analyzes town-specific challenges and creates solutions that maintain the town's identity and regional connection. The team includes experts from Information Systems (Jörg Becker, Thomas Hupperich, Bettina Distel, Hendrik Scholta), Educational Science (Marcelo Parreira do Amaral), Sociology (Matthias Grundmann), Political Science (Norbert Kersting), and Economics (Andreas Lasche) at Ruhr University Bochum.

In February 2023, the research group had a successful kick-off. They established research goals, developed working papers, and fostered collaboration with partner towns and institutions. A workshop in May 2023 with nearly 30 participating towns and institutions provided valuable insights into the challenges of digitalization. Subsequent activities involved literature reviews, empirical research, and resulted in publications. The group also engages students through seminars in the University’s 2023 summer and 2023/2024 winter terms, sharing their research content and questions related to digital towns.

eGov-Campus at the University of Münster

As public service delivery becomes increasingly digital, e-government initiatives are gaining importance. However, the public sector continues to face a shortage of personnel with adequate IT skills to address this challenge. To tackle this issue, the “eGov-Campus” research project began in 2020 with the goal of establishing a nationwide e-learning platform for e-government. This platform empowers public officials to develop essential IT competencies. In 2021, the first online course, led by Prof. Jörg Becker and the CC eGov, focused on process management in the public sector.

While the initial course received positive feedback, it became apparent that the course’s depth was overwhelming for public employees not working as process managers. However, some basic and potentially role-specific knowledge was deemed valuable to a broader audience. Thanks to extended funding from the German IT planning council, activities in 2023 concentrated on modularizing the course and tailoring content for specific target groups. The modularized course now includes a foundational module for all employees and additional modules for process managers, organizational employees, and IT personnel. It is scheduled to launch by the end of 2023.

To expand the project’s impact, we partnered with Speyer University for the first time this year to deliver the process management course in a hybrid format. The CC eGov has taken on a coordinating role in the project, with project administration handled by the Hessian State Chancellery.

Collaboration with the Norwegian Labour and Welfare Organisation

During spring 2023, the University of Agder established a strategic partnership with the Norwegian Labour and Welfare Organisation (NAV), based on our research in the digitalization of the public sector at the Department of Information Systems. NAV administers one third of the state budget and has a high need and wish for digital transformation. The collaboration agreement comprises the three programmes Digital Citizenship, Citizen and Augural Digital Government Student Track at the Annual International Conference on Digital Government Research (dg.o 2023) in Gdansk, Poland. The primary objective was to provide Bachelor’s and Master’s students with valuable hands-on experiences in academia and the publication process. Bachelor’s and Master’s students served as the first authors of all accepted papers and presented their research work.

The track at the conference was organized in a hybrid format to attract submissions from around the world, resulting in productive discussions with the audience.

Change in Competence Center lead
At the end of the year, Michael Rakers will pass on his co-leadership role at the competence center to Bettina Distel. Michael has been the head of the competence center since 2007. In light of significant changes in the organization of the Department of Information Systems, now is the appropriate time for this transition to Bettina. Bettina specializes in digitalization of the public sector, with a specific emphasis on trust. Welcome, Bettina!

SELECTED PUBLICATIONS
The deployment of novel technologies in the digital transformation of work creates new avenues for hybrid workplace arrangements. Although recent phenomena-driven research highlights the sustainability of hybrid work, firms struggle with designing work arrangements to benefit the organization and its employees. In this research project, we follow a survey-based approach and investigate what factors guide hybrid workplace behaviors and what influence these hybrid workplace behaviors have on the employees’ IT mindfulness, job satisfaction, and autonomy. The results contribute to understanding hybrid workplace behavior and shed light on how firms can design their work arrangements to facilitate employee self-determination and benefits.

- **People Analytics Beliefs (J. Hullmann in cooperation with M. Gierlich-Jaoss)**

  People analytics (PA) is a sensitive topic that provokes contradictory beliefs, often at odds with the reality of PA’s technological features. While managers tend to overtrust PA in explaining and predicting the workplace, employees fear transparency and surveillance. Confronting these beliefs with the reality of PA leads to unmet expectations and complicates PA’s introduction into organizations. Thus, uncovering how these beliefs are formed is crucial. In this research project, we empirically investigate the beliefs of PA by conducting semi-structured interviews. The results shed light on the contextual factors that guide the formation of beliefs. Explanations for the contradictions are derived and inform guidelines for designing and initiating PA projects. The guidelines contribute to effectively introducing PA in organizations and reducing PA project failures.

- **Meaningful work in human-AI collaboration settings (J. Backmann and B. Berger in cooperation with C. Ruiner)**

  Leveraging technological advances in artificial intelligence (AI), many companies begin to establish collaborations between humans and AI-based systems. This raises the question how the implementation of AI-based systems at the workplace affects human work, specifically its meaningfulness. To answer this research question, we conducted an experimental study. In the first step, we identified tasks that differ in their meaningfulness to human workers. Secondly, we investigated how support by an AI-based system in conducting these tasks affects the tasks’ meaningfulness. The results show that the deployment of an AI-based system does not necessarily affect task meaningfulness or the effect of task type on meaningfulness. However, AI support moderates the relationship between task type and excitement, reducing professionals’ excitement for particular meaningful tasks.

- **Implementing ML-Based Forecast in Financial Planning and Analysis (M. Möllers)**

  Seeking efficiency gains and data-driven insights, organizations increasingly deploy machine learning (ML) techniques to support human work and decision-making. As the introduction of a new technology comes with new roles and interactions between humans and ML-based systems, new actor configurations arise which meet long-established work practices and can evoke diverse challenges and responses. By means of an exploratory case study inside Deutsche Telekom, we investigate the introduction and use of machine learning (ML) predictions within its financial planning and analysis (FP&A) departments.

- **Configurations of Human-AI Work in Agriculture: Adoption and Use of Intelligent Systems by Agricultural Workers (S. Lansmann)**

  By means of an exploratory case study inside Deutsche Telekom, we investigate the introduction and use of machine learning (ML) predictions within its financial planning and analysis (FP&A) departments.

- **Meaningful Work in Hybrid Workplaces (M. Möllers)**

  Leveraging technological advances in artificial intelligence (AI), many companies begin to establish collaborations between humans and AI-based systems. This raises the question how the implementation of AI-based systems at the workplace affects human work, specifically its meaningfulness. To answer this research question, we conducted an experimental two-step study. In the first step, we identified tasks that differ in their meaningfulness to human workers. Secondly, we investigated how support by an AI-based system in conducting these tasks affects the tasks’ meaningfulness. The results show that the deployment of an AI-based system does not necessarily affect task meaningfulness or the effect of task type on meaningfulness. However, AI support moderates the relationship between task type and excitement, reducing professionals’ excitement for particular meaningful tasks.

- **Digital Environments**

 條件設定

  • **Responds to privacy and security risks in Zoom (K. Dassel, S. Klein)**

  During the COVID-19 pandemic, digital platforms like Zoom became essential for remote work. Yet at the same time, substantial privacy and security risks made the headlines. Using the lenses of Naturalistic Decision-making and the Theory of Multilevel Information Privacy, we find diverging responses to well-documented threats that the new interplay between technology, and sociology, as well as practitioners from the IT industry.

  • **Selected research projects**

    - **Remote work.** The COVID-19 pandemic forces companies to work remotely. While some employees are used to using digital platforms like Zoom, others struggle with this new way of working. Some even speak about a ‘Zoom fatigue’. We therefore investigate the challenges that remote work poses and how firms can support their employees. Our interdisciplinary team of scientists from the IT industry, sociology, as well as practitioners from business, computer science, psychology, and sociology, as well as practitioners from the IT industry.

    - **People analytics.** People analytics (PA) is a sensitive topic that provokes contradictory beliefs, often at odds with the reality of PA’s technological features. While managers tend to overtrust PA in explaining and predicting the workplace, employees fear transparency and surveillance. Confronting these beliefs with the reality of PA leads to unmet expectations and complicates PA’s introduction into organizations. Thus, uncovering how these beliefs are formed is crucial. In this research project, we empirically investigate the beliefs of PA by conducting semi-structured interviews. The results shed light on the contextual factors that guide the formation of beliefs. Explanations for the contradictions are derived and inform guidelines for designing and initiating PA projects. The guidelines contribute to effectively introducing PA in organizations and reducing PA project failures.

    - **Meaningful work in human-AI collaboration settings.** Leveraging technological advances in artificial intelligence (AI), many companies begin to establish collaborations between humans and AI-based systems. This raises the question how the implementation of AI-based systems at the workplace affects human work, specifically its meaningfulness. To answer this research question, we conducted an experimental two-step study. In the first step, we identified tasks that differ in their meaningfulness to human workers. Secondly, we investigated how support by an AI-based system in conducting these tasks affects the tasks’ meaningfulness. The results show that the deployment of an AI-based system does not necessarily affect task meaningfulness or the effect of task type on meaningfulness. However, AI support moderates the relationship between task type and excitement, reducing professionals’ excitement for particular meaningful tasks.

    - **Implementing ML-Based Forecast in Financial Planning and Analysis.** Seeking efficiency gains and data-driven insights, organizations increasingly deploy machine learning (ML) techniques to support human work and decision-making. As the introduction of a new technology comes with new roles and interactions between humans and ML-based systems, new actor configurations arise which meet long-established work practices and can evoke diverse challenges and responses. By means of an exploratory case study inside Deutsche Telekom, we investigate the introduction and use of machine learning (ML) predictions within its financial planning and analysis (FP&A) departments.

    - **Configurations of Human-AI Work in Agriculture.** By means of an exploratory case study inside Deutsche Telekom, we investigate the introduction and use of machine learning (ML) predictions within its financial planning and analysis (FP&A) departments.

    - **Meaningful Work in Hybrid Workplaces.** Leveraging technological advances in artificial intelligence (AI), many companies begin to establish collaborations between humans and AI-based systems. This raises the question how the implementation of AI-based systems at the workplace affects human work, specifically its meaningfulness. To answer this research question, we conducted an experimental two-step study. In the first step, we identified tasks that differ in their meaningfulness to human workers. Secondly, we investigated how support by an AI-based system in conducting these tasks affects the tasks’ meaningfulness. The results show that the deployment of an AI-based system does not necessarily affect task meaningfulness or the effect of task type on meaningfulness. However, AI support moderates the relationship between task type and excitement, reducing professionals’ excitement for particular meaningful tasks.
The Competence Center Social Media Analytics (CC SMA) deals with challenges due to the rapid and often disruptive evolution of social media technology. The main 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: information systems, computer science, psychology, statistics, journalism and media, communication science, as well as mathematics.

The CC SMA has continued topics of previous years in research, networking, as well as practitioners from industry were involved their perspective to so-called multimodal content (i.e., text, image, video) analysis. In addition, the CC SMA worked on AI-based methods that strengthen the recognition of generated (textual) content in real-time campaign detection.

In terms of community networking, CC SMA has been involved in building and strengthening the Social Influence Analytics (SIA) network and has been instrumental in applying for and organizing a Lorentz Center workshop on Social Influence Analysis. This workshop was held in Leiden (The Netherlands) at the end of September 2023. More than 25 international scientists from the domains of information systems, computer science, mathematics, psychology, communication science, marketing as well as practitioners from industry were invited. This group was able to discuss definitions of social influence intensively and broadly and identified common research gaps and funding tools.

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Members of the CC SMA supported the organization of the Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM). LNCS, Springer, Cham.

Christian Grimme presented results of the project at the MISDOOM 2023 in Amsterdam, NL. The MISDOOM 2023, Fifth Edition of the International Symposium on Disinformation in Open Online Media was held from 21-23 November 2023. The symposium will be followed by the initial idea of a multidisciplinary joint conference on disinformation research bringing together computer science, social science, political science, journalism, and public services. Since 2019, this is the first on-site MISDOOM event, again. The conference features two keynotes from different scientific domains and multiple parallel sessions in a packed two-day program during 21-22 November 2023. Since 2023, Christian Grimme is also acting as head of the MISDOOM steering committee.

Many members of the CC SMA have published multiple papers on disinformation identification, algorithmization as well as on methodological issues.

Several members of the CC SMA are active project partners in the Hybrid project, which is running until 2024. This project addresses the challenges of disinformation campaign detection. In that context, Christian Grimme presented results of the project and the CC SMA joint work at the German Federal Information Security Conference organized by the Federal Ministry of Research and Education (27-15 March 2023).

The CC SMA organized the Workshop on Social Influence Analysis held in context of the Social Influence Analysis Network at University of Twente in May 2023.

The CC SMA was strongly involved in the organization of the Lorentz Center Workshop on Social Influence Analysis held at Leiden University (25-29 September 2023).

The CC SMA supported the organization of the MISDOOM 2023 in Amsterdam, NL.


Christian Grimme is also acting as head of the MISDOOM steering committee.

Many members of the CC SMA have published multiple papers on disinformation identification, algorithmization as well as on methodological issues.
For any inquiries related to the ERCIS network, please feel free to reach out to us via email – we assure you a prompt response from our dedicated team. The team is led by Dr. Armin Stein, the managing director of the ERCIS network, and includes Julia Seither as the team assistant.

In addition to handling email correspondence, our team plays a crucial role in event organization, website maintenance, and managing network communication.

If you have an interest in the network, don’t hesitate to get in touch with us! We look forward to connecting with you.

info@ercis.org