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Preface

It is our pleasure to present the Proceedings of the 2026 Central European Conference on Information and Intelligent Systems. We trust that this collection will prove both valuable and inspiring to its readers.

These Proceedings contain the full-text papers presented at this year's edition of the Central European Conference on Information and Intelligent Systems (CECIIS), an annual international event organised by the **University of Zagreb Faculty of Organization and Informatics, Varaždin, Croatia.** The conference was held from **16 to 18 September 2026** in Varaždin, Croatia. For more than three decades, CECIIS has served as a bridge between academics and practitioners in the field of information and intelligent systems and related disciplines.

The 37th edition of CECIIS was devoted to the theme "The Next Wave of Intelligent Systems", which invited an exploration of the transformative power of intelligent systems at a moment when technological progress is no longer incremental, but systemic and deeply intertwined with how we understand, model and act in the world. At the centre of attention were disruptive forces such as generative artificial intelligence, smart industry, digital twins, quantum computing, biotechnology and renewable energy technologies. Together, these domains are radically reshaping the paradigms of intelligent and information systems, opening new avenues for innovation and for the creation of economic, social and sustainable value. The theme also examined the synergy between people and digital technology, with particular attention to artificial intelligence as a cognitive collaborator rather than a mere instrument of automation.

Although no single event can fully capture the challenge of harnessing the coming developments in intelligent systems, CECIIS 2026 reaffirmed our shared commitment to leading change rather than merely responding to it. Through interdisciplinary collaboration, critical enquiry and bold experimentation, we are jointly shaping a future that is not to be feared, but designed, guided and put to use as a force for good.

It is also worth emphasising that the composition of the Programme and Organising Committees, bringing together academics and experts from a wide range of fields, gives the conference a genuinely cross-disciplinary character. This format steers discussion towards topics likely to gain prominence in the near future, while fostering valuable networking among individuals whose diverse expertise and collective insight form the very foundation of CECIIS.

The Proceedings of CECIIS 2026 comprise 70 rigorously reviewed scientific papers. Each paper was assessed by at least two independent reviewers and subsequently approved by the international Programme Committee. The papers are grouped into the following tracks: Computer Games; Cyber-Physical Systems and Intelligent Energy; Digital Transformation and Corporate Culture; Innovation, Entrepreneurship and Economic Growth; Intelligent Systems; Learning Analytics, AI and Technologies in Education; Strategic Planning and Decision Making; Trends in Software Engineering; and The Next Wave of Intelligent Systems. Papers were selected on the basis of their relevance, originality, applicability to the domain of information and intelligent systems, and overall scholarly merit. The official language of the conference is English.

In total, 91 papers were submitted for review. The review process was carried out by 120 reviewers, roughly half from Croatia and half from abroad, who between them completed 199 reviews, resulting in the acceptance of 74 papers. These papers, written by 177 authors from 14 countries, were presented at the conference. Following the event, a selection of papers will undergo further review with a view to extended publication in the Journal of Information and Organizational Sciences (JIOS), the international scientific journal published by the University of Zagreb Faculty of Organization and Informatics, and in Computer Science and Information Systems(ComSIS), published by the Faculty of Organizational Sciences (FON). Previous editions of the Proceedings have been indexed in the following bibliographic databases: Web of Science, ProQuest, DOAJ and EBSCO.

A defining feature of this year's conference was its distinguished invited **keynote speakers**, scholars whose contributions have shaped their respective fields of scientific and professional enquiry. CECIIS 2026 was honoured to welcome the following keynote speakers:

- Prof. Dr.-Ing. Dr. h.c. Detlef Zühlke holds an MSc in electrical engineering and computer science and a PhD in robotics, both from RWTH Aachen, Germany. Until his retirement in 2018 he was Professor of Industrial Automation at the Technical University of Kaiserslautern and Director of the Innovative Factory Systems (IFS) research department at the German Research Center for Artificial Intelligence (DFKI). From 2005 to 2019 he also served as Executive Chairman of SmartFactory KL, a non-profit research association and a worldwide pioneer in smart manufacturing. His research interests lie in industrial control architectures, factory planning and operation, and human–machine systems for industrial applications. He is widely regarded as a pioneer of the Industry 4.0 paradigm, having paved the way into this new era through numerous groundbreaking contributions.
- Jordi Linares-Pellicer is Professor of Computer Science at the Universitat Politècnica de València (UPV), with more than forty years of experience in computing and a career spanning artificial intelligence, human–computer interaction, extended reality and generative models. He leads the VertexLit research group at VRAIN (Valencian Research Institute for Artificial Intelligence) and is Academic Director of ValgrAI, the Valencian Graduate School and Research Network of Artificial Intelligence. He is recognised for bridging frontier AI research with real-world impact in healthcare, education and accessibility, and for his extensive activity as a speaker, educator and public communicator on the latest advances in AI and their implications for society, industry and education.

A number of IT companies and agencies, as partners of the Faculty, took an active part in both the conference programme and the post-conference events by organising sponsored sessions. This collaboration attests to the conference's strong ties with the IT sector and promotes an essential exchange of knowledge and experience. Such synergy between the business sector and the scientific community is central to adapting to change and meeting the challenges fac-ing IT and beyond.

Alongside the scholarly sessions, the conference featured a section dedicated to student post-ers and presentations, comprising **13 student abstracts by 22 authors from 4 countries.** These contributions added depth and diversity to the intellectual landscape of the conference. The student section was further enriched by an invited lecture: Professor Hanlie Smuts of the Uni-versity of Pretoria spoke on "Who Owns You Online: What Happens When You Log Out for Good".

The **Cracker Barrel Session**, held as part of the conference, provided an informal and collaborative forum for enhancing decision-making agility in the digital transformation of education within our institution, with a particular focus on the integration of AI.

CECIIS 2026 also introduced a novelty: for the first time in the conference's history, the main programme was preceded by a dedicated pre-conference day featuring two workshops. "Using Learning Analytics to Explore Learning Patterns and Paths", organised by the Laboratory for Learning Analytics at the Faculty of Organization and Informatics together with the TRU-ELA and SAILeR project teams, offered researchers, including doctoral students, a forum on learning patterns, learning paths and the AI-supported analysis of educational data. "Agility in Action: Decision-Making for Today's Higher Education" drew on interactive activities and real-world cases, including AI adoption, to explore agile decision-making in higher education. The Warm-up Talks provided an informal opening to the conference, a relaxed opportunity to exchange ideas before the formal sessions began, and an evening social event rounded off the day.

We extend our sincere thanks to all who contributed to the conference programme and to these Proceedings: our esteemed keynote speakers, authors, reviewers and session chairs, as well as the members of the Programme and Organising Committees, whose dedication was indispensable. The steadfast support of the University of Zagreb Faculty of Organization and Informatics underpinned the success of the conference.

Finally, we express our profound gratitude to our respected academic and industrial partners, sponsors and donors, whose unwavering support made CECIIS 2026 such a resounding success. The financial support of our sponsors and donors, including Jadranski naftovod d.d., Oracle Hrvatska d.o.o., InfoDom d.o.o., HBOR d.d., Grad Varaždin, Varaždinska županija, SICK Mobilisis d.o.o., Financijska agencija d.d., Grad Novi Marof, Autocesta Zagreb–Macelj, Grad Čakovec, Međimurska županija, Jedinstvo Krapina d.o.o., Pilana Ratković, Općina Gornji Kneginec, Sirana Krnjak, Vinarija Furjan and Vindija, was invaluable.

In closing, it is our sincere hope that CECIIS 2026 offered its participants an enriching and productive experience, and that readers will find these Proceedings a source of relevant and engaging work. The lasting connections forged with participants over the years strengthen our commitment to continuous improvement. We already look forward to the next Central Euro-pean Conference on Information and Intelligent Systems, to be held in autumn 2027.

September 2026

On behalf of the Programme and Organizing Committees

Full Prof. Nina Begičević Ređep, PhD and Asst Prof. Bogdan Okreša Đurić, PhD

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