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Preface

It is with great pleasure that we present the Proceedings of the Central European Conference on Information and Intelligent Systems.

These Proceedings contain full conference papers presented at the Central European Conference on Information and Intelligent Systems (CECIIS 2020), held in Varaždin, Croatia, October 7-9, 2020. Proceedings are published in print and digital edition.

CECIIS has been held for 31 years. Due to the pandemic and travel restrictions, and having in mind the health of the participants and organizers, this year the conference was held online. The main purpose of the conference was, in particular, to bring together people active in the area of computer science and related sciences and to present new research results.

The conference had international participants, as well as an international Program Committee, which has enabled CECIIS to become one of the most important conferences in the field of applied information science and informatics in Central Europe. It is our great pleasure that this year's international co-editor is professor William Steingartner from the Technical University of Košice, Slovakia.

Moreover, the conference and the accompanying events are certainly the most significant annual scientific event at the Faculty of Organization and Informatics, University of Zagreb (FOI). Together with the scientific journal JIOS, CECIIS is one of the pillars of scientific research activities at FOI and often the first arena of internationalization and networking for many young researchers.

The special topic of CECIIS 2020 Conference "Intelligent systems – Trends, Future, Society", was designed with the aim to provide our participants an opportunity to research and discuss the advantages and possibilities of contemporary digital technologies and their impact on society.

As in the past, we have been successful in bringing together specialists from a wide variety of fields. The Proceedings of CECIIS 2020 include 38 research papers, internationally peer-reviewed by two independent reviewers and approved by the international Program Committee within the following research tracks: Computer Games, Data and Knowledge Bases, Education and Learning Analytics, Emerging Trends in ICT, ICT Entrepreneurship and Innovation, Intelligent Information Systems, Quality of Software and Services, Software Engineering, Strategic Planning and Decision Making. All papers focus on actual problems and present both theoretical and practical results and applications thus exploiting the innovative approaches.

CECIIS 2020 reviewers conducted 85 reviews (38 from Croatia and 47 from abroad) of 38 accepted papers that were prepared by 82 (co)authors from 4 countries (Croatia - 56, Slovenia - 19, Serbia - 5 and Cyprus - 2) and presented online during three conference days.

The authors of eight accepted papers have also submitted the Croatian translations of their papers. The translated papers are published on the conference website:

<http://archive.ceciiis.foi.hr/app/index.php/ceciiis/index/pages/view/ProceedingsArchiveHR>.

On the first day of the conference, a meeting of the international Program Committee was held, during which it was elected the best research paper of the conference. Several interesting papers were presented at the conference, so the selection process was not easy. The winning paper (after the careful selection process) titled "Topic Modeling in Social Sciences: Case Study of Web of Science" was submitted by authors Maja Buhin Pandur, Jasminka Dobša and Luka Kronegger.

The paper was presented in the section "Intelligent Information Systems" and was officially declared the best conference paper during the closing session of the conference. The special value of this year's conference is featured by the outstanding invited lecturers, researchers who have left a deep mark in the scientific and professional areas of their interest.

Within the CECIIS 2020 the following two invited lectures were presented:

- Prof. Jan Mendling, Vienna University of Economics and Business Institute for Information Business, Austria: "The Convergence of Business Process Management and Digital Innovation" and
- Prof. Josep M. Duart, University of Oberta de Catalunya, Educational Sciences Department, Spain: "AI in Higher Education: Teaching and Learning Perspectives".

Within the Student Poster Section, 16 student research papers in interdisciplinary fields were presented by students from prominent American and European universities - University of Central Florida (FL, Orlando), University of Cincinnati (Ohio), Massachusetts Institute of Technology MIT (Cambridge, Massachusetts) and University of Pennsylvania (Philadelphia, PA, USA), the universities of Tirana and Shkodra (Albania) and FOI (Croatia).

The conference program also included two academic panels, in which more than 200 participants from Croatia and abroad actively participated. The panel discussion on "O_HAI 4 Games - Orchestration of Hybrid Artificial Intelligence Methods for Computer Games" was moderated by professor Markus Schatten (Faculty of Organization and Informatics) and was attended by foreign panellists: Vicente Julian Inglada (Valencia University of Technology, Spain), Carlos Carrascosa Casamayor (Universitat Politècnica de Valencia, Spain), Jaime Andres Rincon Arango (Universitat Politècnica de Valencia, Spain) and Glenn Smith (University of South Florida, USA).

The academic panel discussion titled "Universities of the Future" was moderated by professor Blaženka Divjak (Faculty of Organization and Informatics) and was attended by the distinguished panellists: Ivica Crnković (Chalmers University of Technology & University of Gothenburg, Sweden), Lourdes Guàrdia (Open University of Catalonia, Spain), Mladen Vouk (North Carolina State University, USA) and Enrique Mu (Carlow University, USA). The CECIIS 2020 conference was organized in cooperation with the EDEN network. During the conference, the "Eden PhD Symposium 2020" was held, which served as a great opportunity to encourage the exchange of experiences and knowledge among doctoral students engaged in research in the field of technologically enhanced online, digital, open and distance learning.

Another panel was held in the sponsorship section, with the participation of sponsors Oracle, Infodom and DignetSoftware. The biggest challenge for the organizers of the CECIIS 2020 conference was to hold the conference in a virtual format. In addition to the difficulties and disadvantages of such conference format, including the lack of face-to-face meetings, physical contact and networking, the online conference had some advantages, primarily the access from remote locations and greater attendance at scientific sections and other events.

Our thanks go first and foremost to the invited speakers and all authors who, by their presence and scientific contributions, made this conference such a success. We also like to express our appreciation to all reviewers for their valuable opinions and recommendations. Thanks to their expertise and experience, they have contributed to increasing the impact of the submitted articles. Furthermore, we would like to express our utmost gratitude to session chairs, attendees, organizers of parallel events, as well as Program and Organizing Committee members for their contributions. We acknowledge that the organizational and supporting assistance and hosting of the Faculty of Organization and Informatics was crucially important for the overall success of the Conference. We are very grateful to all our industrial partners and sponsors for their support. CECIIS 2020 was supported by sponsors - Infodom, Oracle, DignetSoftware, Varaždin County and the Ministry of Science and Education of the Republic of Croatia.

Finally, we hope that inside these covers you will find relevant and interesting papers in the field of information and intelligent systems.

We are looking forward to the following Central European Conference on Information and Intelligent Systems that will be held on October 13-15, 2021 at the same location.

October, 2020

On the behalf of the Program and Organizing Committees

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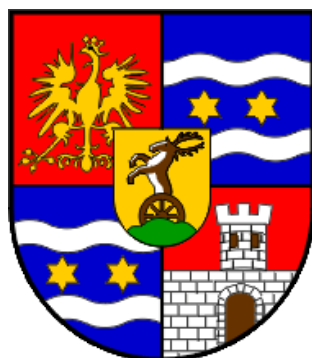
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