

IMCL2021

*"New Realities, Mobile Systems and Applications"*

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Mediterranean Palace Hotel\*, Thessaloniki, 4-5 November 2021

*\* IMCL2021 is planned as a hybrid event (remote & onsite presentations will be supported)*

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## Special Session Call for Papers

### Artificial intelligence, cross Reality, and digital Twins (ART)

#### Overview

In this Special Session, we focus on three amazing technologies: Artificial Intelligence (AI), Cross Reality (XR), and Digital Twins (DT). AI is a key to many modern and future innovations in different areas. XR introduces new dimensions into our experience. DT offers promising opportunities for digital representation of real objects (physical twins) for different purposes. But what can we achieve if we combine these technologies? What new value can we offer to society? What are both existing and potential use cases for such an advancement? In this Special Session, we are going to find answers to these questions. Our aim is to show the benefits of a synergy of AI, XR, and DT. At this stage, it is too early to say about the complete combination of these techniques, however, elements of a future technology of Intelligent XR-based Digital Twins are already being developed. We would like to initiate a discussion on this matter among the interested researchers. We named this Special Session the ART because it is a kind of art so far to create a DT based on elements of AI and XR. But we would like to find a way how to make a transition from heuristic to universal methods of creating such advanced DTs. We invite you to share your experience and ideas on this promising topic.

#### Topics

- Data collecting, processing and quality for intelligent XR systems
- Deep Learning architectures for XR and DT applications
- Mobile AR solutions and Tiny Machine Learning
- AI methods for personal intelligent DT
- Data analysis for DT applications
- Formal methods for DT development
- Visual modelling for XR and DT
- Multimedia elements for DT
- Data fusion methods for DT
- Physical Twins behaviour modelling
- Software tools and methods for AI, XR, and DT
- AI+DT use cases
- DT applications for education
- DT applications for health care
- AI+XR use cases
- AI+XR applications for education
- AI+XR applications for medicine and health care

#### Contribution Types

Papers for the Special Session should have between 8 and 10 pages.

All submissions will be peer-reviewed by at least two reviewers. Accepted papers will be included in the conference proceedings if at least one author pays the registration fee AND the paper is presented. The conference proceedings will be published as IMCL2021 Proceedings in the Springer series "[Advances in Intelligent Systems and Computing](#)".

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For further questions, please contact the track chair(s).

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### **Important Dates**

10 Jul 2021 Submission of complete papers for special sessions  
26 Jul 2021 Notification of acceptance  
06 Sep 2021 Camera-ready due & author registration deadline  
04 Nov 2021 IMCL2021 Conference Opening

### **Submission**

Please visit: <https://www.conftool.org/imcl-conference> and submit your paper by selecting the respective special session.

### **Program Committee**

#### **Chair(s)**

Prof. Dr. Andreas Pester, British University in Egypt, UK, [andreas.pesther@bue.edu.eg](mailto:andreas.pesther@bue.edu.eg)  
Dr. Yevgeniya Sulema, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine  
[sulema@pzks.fpm.kpi.ua](mailto:sulema@pzks.fpm.kpi.ua)

#### **Members**

Prof. Frederic Andres, National Institute of Informatics, Japan, [andres@nii.ac.jp](mailto:andres@nii.ac.jp)  
Dominik May, University of Georgia, USA, [dominik.may@uga.edu](mailto:dominik.may@uga.edu)  
Dr. Gregor Rozinaj, Slovak University of Technology, Slovakia, [gregor.rozinaj@stuba.sk](mailto:gregor.rozinaj@stuba.sk)  
Dr. Estêvão Bissoli Saleme, Federal Institute of Education, Science and Technology of São Paulo, Brazil, [estevaobissoli@gmail.com](mailto:estevaobissoli@gmail.com)  
Dr. Valerie Varney, Technical University Cologne, Germany, [valerie.varney@th-koeln.de](mailto:valerie.varney@th-koeln.de)  
Prof. Olga Maksimenkova, Higher School of Economics, Russia, [omaksimenkova@hse.ru](mailto:omaksimenkova@hse.ru)  
Rita Li, Hong Kong Shue Yan University, [yml@hksyu.edu](mailto:yml@hksyu.edu)  
Prof. Rajkumar Kannan, Bishop Heber College, India, [dr.rajcumarkannan@gmail.com](mailto:dr.rajcumarkannan@gmail.com)  
Viera Rozinajova, Kempelen Institute of Intelligent Technologies (Slovakia),  
[viera.rozinajova@kinit.sk](mailto:viera.rozinajova@kinit.sk)