

MOSTART

1st International Conference on Digital Transformation in Education and Artificial Intelligence Applications

APRIL
18th – 20th
2023



About the conference

MoStart is the first international conference focused on digital transformation in education and artificial intelligence applications. The goal of this scientific conference is to bring together experts who deal with artificial intelligence and its application in all areas of human life, especially in education. MoStart will be held in Mostar, Bosnia and Herzegovina from April 18 to April 20, 2023.

The conference addresses a broad spectrum of technology-based topics, including Intelligent Tutoring Systems, Augmented Reality in Education, and Robotics in Education. Additionally, MoStart emphasizes on the application of AI and Machine Learning in education. The conference will also cover the challenges and opportunities associated with the implementation of these technologies in the classroom, and discuss the role of government, education institutions and businesses in promoting innovation in education. Researchers, educators, and professionals from various industries converge at MoStart to share their knowledge and experiences in incorporating technology in education. The conference offers a dynamic program featuring technical sessions, keynote speeches, and engaging workshops, providing a comprehensive and diverse learning experience for attendees.

Program committee

 Sanja Bijakšić, Ph.D. – University of Mostar	 Mirjana Bonković, Ph.D. – University of Split	 Ivo Čolak, Ph.D. – University of Mostar	 Juan Manuel Fernández Luna, Ph.D. – University of Granada	 Irena Galić, Ph.D. – University of Osijek
 Sven Gotovac, Ph.D. – University of Split	 Tamara Grujić, Ph.D. – University of Split	 Rainer Herpers, Ph.D. – Bonn-Rhein-Sieg University of Applied Sciences	 Zdenko Klepić, Ph.D. – University of Mostar	 Goran Martinović, Ph.D. – University of Osijek
 Pedro Miguel Moreira, Ph.D. – Polytechnic Institute of Viana do Castelo	 Vladan Papić, Ph.D. – University of Split	 Marko Rosić, Ph.D. – University of Split	 Slavomir Stankov, Ph.D. – Retired full professor at the University of Split	 Zoran Tomić, Ph.D. – University of Mostar
 Drago Žagar, Ph.D. – University of Osijek	 Boris Crnokić, Ph.D. – University of Mostar	 Malik Čabaravdić, Ph.D. – University of Zenica	 Ani Grubišić, Ph.D. – University of Split	 Tončo Marušić, Ph.D. – University of Mostar
 Jonathan Schler, Ph.D. – Holon Institute of Technology	 Jan Snajder, Ph.D. – University of Zagreb	 Danijel Topić, Ph.D. – University of Osijek	 Tomislav Volarić, Ph.D. – University of Mostar	 Branko Žitko, Ph.D. – University of Split
 Eliçabete Cunha, Ph.D. – Polytechnic Institute of Viana do Castelo	 Bárbara Cristina Dos Santos Gaspar Cleto, Ph.D. – Polytechnic Institute of Porto	 Angelina Gašpar, Ph.D. – University of Split	 Janez Gotlih, Ph.D. – University of Maribor	 Miroslav Grubišić, Ph.D. – University of Mostar
 Mirela Kundid Vasić, Ph.D. – University of Mostar	 Nikola Ljubešić, Ph.D. – University of Ljubljana	 Željko Marušić, Ph.D. – University of Mostar	 Mirza Oruč, Ph.D. – University of Zenica	 Ivan Peko, Ph.D. – University of Split
 Višnja Simić, Ph.D. – University of Kragujevac	 Suzana Tomaš, Ph.D. – University of Split	 Daniel Vasić, Ph.D. – University of Mostar	 Josip Vasilj, Ph.D. – University of Split	 Krunoslav Žubričić, Ph.D. – University of Dubrovnik

Organizing committee

 Boris Crnokić, Ph.D. – University of Mostar	 Tomislav Volarić, Ph.D. – University of Mostar	 Mirela Kundid Vasić, Ph.D. – University of Mostar	 Krešimir Rakić, Ph.D. – University of Mostar	 Davorka Topić Stipić, Ph.D. – University of Mostar	 Daniel Vasić, Ph.D. – University of Mostar	
 Marin Bošnjak – University of Mostar	 Robert Rozić – University of Mostar	 Emil Brajković – University of Mostar	 Željko Čorić – Institute of Education, Mostar	 Franjo Vučić – University of Mostar	 Josip Doko – University of Mostar	
 Ana Pinjuh – University of Mostar	 Goran Škvarc – CARNET	 Hrvoje Ljubić – University of Mostar	 Maja Marić – University of Mostar	 Ivan Ostojić – University of Mostar	 Tomislav Papac – University of Mostar	
 Krešimir Čavar – University of Mostar	 Anton Martinović – University of Mostar	 Petar Matić – University of Mostar	 Manlio Napoli – University of Mostar	 Damir Vasilj, Ph.D. – University of Mostar	 Valentina Vidović – Primary School Kiseljak	 Robert Šlišković – University of Mostar
 Goran Dujak – Ministry of Education, Science, Culture and Sports, The Posavina Canton	 Tin Brdar – Ministry of Science, Education, Culture and Sports, The Herzegovina-Bosnian Canton	 Jelena Skoko – Institute for Upbringing and Education, The West Herzegovina Canton and the Herzegovina-Bosnian Canton	 Ana Kordić – Ministry of Education, Science, Culture and Sports, The West Herzegovina Canton	 Snježana Damjanović – School center Martina Nedića (OFM), Orasje	 Karlo Popović – University of Mostar	 Vedran Mihalj – University of Mostar

Thematic areas of the international scientific conference

The thematic areas are divided into 5 different categories. The thematic areas cover a wide range of topics from advanced technologies in education to computer vision and natural language processing. The list of thematic areas and topics are listed below.

T1 Advanced Technologies in Education

Advanced technologies are revolutionizing the field of education and transforming the way we learn and teach. Cutting-edge technologies are helping to personalize education, improve the learning experience and provide students with new opportunities to engage with their course material. The topics of interest in this track are as follows but not limited to:

- Artificial Intelligence in Education
- Robotics in Education
- Robotics for Assessment and Evaluation
- Games and Serious Games in Education
- Games for Assessment and Evaluation
- Game-based and Simulated Learning Environments
- Intelligent Tutoring Systems
- Future Trends in Intelligent Tutoring Systems
- Augmented Reality in Education
- Virtual Reality in Education
- Applied Natural Language Processing in Education
- Question Answering and Dialogue Systems in Education
- Computer Vision and Applications in Education
- Knowledge Representation in Intelligent Tutoring Systems
- IoT Applications in Education
- Metaverse applications in Education
- Learning Analytics and Data Mining
- Deep Neural Networks for Personalized Learning
- Recommender Systems and Predictive Analytics
- Reinforcement Learning
- Generative Models and Generative Adversarial Networks (GANs)
- Application of Artificial Intelligence in Law and Education: Privacy and Ethical Issues

T3 Smart City Environments and Artificial Intelligence in Industry 4.0

A smart city leverages a variety of technologies, such as the Internet of Things (IoT), big data analytics, and smart infrastructure, to gather data and make informed decisions about city planning, resource management, and other aspects of city life. The goal of this topic is to showcase quality research that can create urban environments that are more livable, sustainable, and efficient, while also improving the quality of life for citizens.

- IoT and Smart Infrastructure
- Big Data Analytics for Smart Cities
- Smart Transportation Systems
- Smart Energy Management
- Smart Water Management
- Smart Waste Management
- Smart Public Safety and Emergency Response
- Smart Healthcare for Cities
- Smart City Governance and Policy
- Smart City and Sustainability, Smart Energy efficiency, Smart Grid
- Industry 4.0 Factory
- Big Data
- Industrial Internet of Things
- Internet of Services
- Smart Manufacturing
- Smart Devices and Products
- Smart Logistics
- Predictive Analytics
- Robotic and Automation
- Collaborative robotics in Industry 4.0
- Cloud Computing for Industry 4.0
- Intelligent Decision-support Systems
- Digital, Smart Responsive and Adaptive Factory
- Supply Chain Management 4.0
- Industrial Communication and Industry 4.0
- Artificial Intelligence for Solar and Wind Energy
- Thermal and Recycling Computing System
- Biomass Computing System
- Intelligent Command and Control Systems for Renewable Energy
- Intelligent and Renewable energy for IT Equipments
- Intelligent and Green technology
- Energy saving in Industry and Buildings Technology
- Sustainable Energy Research and Applications for Industry
- Sustainable Energy for Electrical Vehicles and Components
- Computational methods for sustainable energies

T2 Applied Natural Language Processing

Applied Natural Language Processing (NLP) refers to the use of NLP techniques and methods in real-world applications and domains, such as education, healthcare, and social media. NLP has the potential to revolutionize the way we learn, communicate, and make sense of vast amounts of textual information.

- Text Classification and Sentiment Analysis
- Named Entity Recognition and Linking
- Text Summarization and Generation
- Question Answering and Dialogue Systems
- Sentence Representation and Embedding
- Natural Language Processing for social media
- Multi-lingual NLP and Cross-lingual Transfer
- Text Classification and Sentiment Analysis
- Named Entity Recognition and Linking
- Text Summarization and Generation
- Question Answering and Dialogue Systems
- Sentence Representation and Embedding
- Knowledge Representation
- Natural Language Processing for social media
- Multi-lingual NLP and Cross-lingual Transfer
- Blockchain for Student Data Privacy

T4 The Intersection of AI, Ethics, and Security in Education and the Legal Profession

Artificial intelligence has been talked about for a long time, but in the past few months it has experienced expansion. Many wonder how it will affect and how it can be applied in the legal profession. AI is rapidly changing the way we live and work, but with this change comes new ethical and security concerns. The conference will also explore the ethical considerations of AI, including issues of bias, privacy, and accountability.

- Network Security for Online Learning Environments
- Blockchain for Verifiable Credentials in Education
- Network Security for IoT in Education
- Data Privacy in Online Learning
- Ethical Issues in Educational Technology
- Cybersecurity for E-Learning Platforms
- Student Data Privacy in the Digital Age
- Ethical Use of Big Data in Education
- The Impact of AI on Data Privacy Laws and Regulations
- The Role of AI in Criminal Justice: Ethics and Accuracy
- The Implications of AI Bias in Legal Decision Making
- The Future of Contract Law in the Age of AI
- The Use of AI for Predictive Policing: Risks and Opportunities
- AI and Intellectual Property Law: Protecting Innovations
- The Impact of AI on Labor and Employment Law
- The Future of Consumer Protection Law in the Age of AI
- The Interplay between AI and Insurance Law
- AI and Company Law and Practice
- The impact of AI-based analysis on legal decision-making
- The role of expert knowledge and critical judgment in interpreting AI-based analysis of legal subjects

T5 Computer Vision

Computer vision has numerous applications in fields such as medicine, security, entertainment, and education, among others. The goal of this track is to produce high quality research to develop algorithms and techniques that can automatically analyze and understand visual information contained in images, videos, and other types of data. The topics of interest in this track are as follows but not limited to:

- Object Detection and Recognition
- Image and Video Analytics
- Image and Video Understanding
- Motion Analysis and Video Tracking
- Face Recognition and Biometrics
- Scene Understanding and 3D Reconstruction
- Image and Video Generation and Synthesis
- Deep Learning for Computer Vision
- Human Computer Interaction
- Biomedical Image Processing
- Remote Sensing and Hyperspectral Imaging
- Robotics and Driving Scene Analysis
- Segmentation, Grouping and Shape
- 3D Computer Vision
- 3D Object Recognition