
Technical Program

Friday 19 May 2023

09:00 - 09:30	Opening Ceremony - Day I: Jelena Begović , Ministry of Science, Technological Development and Innovation Nikola Dašić , Mayor of the City of Kragujevac Prof. Nenad Filipović , Rector of the University of Kragujevac
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09:30 - 10:30	Keynote speakers: Introduction and Enhancement of Entrepreneurship Among Young and Talented People Prof. Daniel Shechtman The Psychological Aspects of Entrepreneurship Prof. Zipora Shechtman Chair: Nenad Filipović
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10:30 - 11:00	Coffee Break
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11:00 - 12:00	Keynote speakers: Opportunities and Challenges of the ChatGPT Era Prof. Avi Mendelson Big Data and Medical Imaging Data Space Prof. Dimitrios Fotiadis Chair: Zlatan Car
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Session F.1: 12:00-14:15 Mini-Symposium I – AI in Energy and Environmental Science Chair: Boban Stojanović	
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F.1.1 – Implementation of Hybrid ANN-GWO Algorithm for Estimation of the Fundamental Period of RC-Frame Structures – *Filip Đorđević, Marko Marinković*

F.1.2 – Application of Unstructured Based Features in Prediction of Real Estate Prices: A Comparative Study – *Diana Vranešević, Đorđe Nedeljković, Miloš Kovačević*

F.1.3 – Applying Machine Learning for Assessment of Dynamic Modulus of Asphalt Mixture – *Nikola Milovanović, Miloš Lukić*

F.1.4 – Soil Organic Carbon Map of Vojvodina (Serbia) Obtained by Random Forest Spatial Interpolation – *Branislav Bajat, Milutin Pejović, Aleksandar Sekulić, Ognjen Antonijević, Petar Bursać, Dragutin Protić, Milan Kilibarda*

F.1.5 – ML-based Mode for Thermal Stress Evaluation of the River Stream – *Milan Stojković, Ivana Krtolica, Nikola Prodanović*

F.1.6 – Data-driven Digital Twins of Renewable Energy Grids – *Danica Prodanović, Nikola Andrijević, Boško Laković, Boban Stojanović*

F.1.7 – Integrating Top-level Constraints into a Symbolic Regression Search Algorithm – *Marko Đukanović, Aleksandar Kartelj*

F.1.8 – Forecasting the Production of Solar Plants Using Physics Informed Neural Networks –
Branka Andrijević, Miloš Ivanović

F.1.9 – Forecasting River Water Levels Influenced by Hydropower Plant Daily Operations Using Artificial Neural Networks – *Miloš Milašinović, Dušan Marjanović, Dušan Prodanović, Nikola Milivojević*

14:15 - 15:00	Buffet Lunch
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Session F.2: 15:00-17:00

Mini-Symposium II – AI & IOT for Smart Industry

Chair: Milovan Medojević

F.2.1 – Estimation of Oscillatory Comfort During Vertical Vibrations Using an Artificial Neural Network – *Igor Saveljić, Slavica Mačuzić Saveljić, Branko Arsić, Nenad Filipović*

F.2.2 – Different Dataset Preprocessing Methods for Tree Detection Based on UAV Images and YOLOv8 Network – *Milan Grujev, Aleksandar Milosavljević, Aleksandra Stojnev Ilić, Miloš Ilić, Petar Spalević*

F.2.3 – AI Anomaly Detection for Smart Manufacturing – *Bojana Bajić, Milovan Medojević, Miloš Jovičić, Aleksandar Rikalović*

F.2.4 – Drawbacks of Programming Dataflow Architectures and Methods to Overcome Them –
Nenad Korolija

F.2.5 – A CNN Network-driven Autonomous Work-piece Surface Anomalies Detection in CNC Manufacturing – *Milovan Medojević, Velibor Ilić*

F.2.6 – Towards a Protocol for Process Communication Based on Classical Logic – *Dragiša Žunić*

F.2.7 – AIoT Trends in Intelligent Manufacturing: A Review – *Milovan Medojević, Bojana Bajić, Miloš Jovičić, Aleksandar Rikalović*

F.2.8 – Autonomous State-based Determination of the Machine Operation Behavior in the Hinge on Energy Consumption – *Milovan Medojević; Velibor Ilić*

17:00 - 17:30	Coffee Break
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17:30 - 18:30	Keynote speakers: DataFlow SuperComputing for BigData DeepAnalytics Prof. Veljko Milutinović Artificial Intelligence for Blockchain Technology and Vice Versa Prof. Miodrag J. Mihaljević Chair: Emil Jovanov
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Session F.3: 18:30-20:30

Mini-Symposium III – Artificial Intelligence in Computer Vision and Remote Sensing

Chair: Marko Pavlović

F.3.1 – Applying Active Learning in NLP Domain – *Velibor Ilić, Nikola Prodanović, Vladimir Kalušev*

F.3.2 – Use of Sentinel-2 Remote Sensing Images for Land Use Classification – *Marko Pavlović, Slobodan Ilić, Dubravko Čulibrk*

F.3.3 – Soil Moisture Content Estimation Based on Soil Properties and Weather Conditions –
Karlo Bala, Michele Bandecchi

F.3.4 – Application of the Neural Network Algorithm in the Assessment of the Stage of Acute Kidney Damage and the Selection of Treatment Modalities – *Zorana Stoisavljević, Slobodanka Galović, Danijela Tasić, Ivanka Stanimirović, Katarina Đorđević*

F.3.5 – Comparative Analysis of Semantic Segmentation and Object Detection Methods for Early Fire Detection – *Josip Balen, Matej Arlović, Petar Marić, Davor Damjanović, Krešimir Vdovjak*

F.3.6 – Enhancement of Outdated Vision Systems in SMEs with Artificial Intelligence Powered Solutions – *Nemanja Pajić, Lazar Pavlović, Fatima Živić, Jovana Aleksić*

F.3.7 – Object Detection in Precision Viticulture Based on UAV Images and Artificial Intelligence – *Milan Gavrilović, Dušan Jovanović, Miro Govedarica*

F.3.8 – Material Classification of Underground Objects from GPR Recordings Using Deep Learning Approach – *Daniel Štifanić, Jelena Štifanić, Sandi Baressi Šegota, Nikola Anđelić, Zlatan Car*

20:30 - 24:00	Gala Dinner
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Saturday 20 May 2023

9:00 - 9:30	Keynote speaker: Embedding Artificial Intelligence into Wearable IoMT Systems Prof. Emil Jovanov Chair: Tijana Geroski
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9:30 - 10:00	Coffee Break
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Session S.1: 10:00-11:00

AI in Medical Science part I

Chair: Zlatan Car

S.1.1 – Development of a Mathematical Model for Balloon Diameter Calculation in Percutaneous Transluminal Angioplasty Using Genetic Programming – *Leo Benolić, Lemana Spahić, Safi Qamar, Dalibor Nikolić, Nenad Filipović*

S.1.2 – Comparison of Data-driven and Physics-informed Neural Networks for Surrogate Modelling of the Huxley Muscle Model – *Bogdan Milićević, Miloš Ivanović, Boban Stojanović, Miljan Milošević, Vladimir Simić, Miloš Kojić, Nenad Filipović*

S.1.3 – Simulation of Blood Flow Through a Patient-Specific Carotid Bifurcation Reconstructed Using Deep Learning Based Segmentation of Ultrasound Images – *Tijana Đukić, Miloš Anić, Branko Gaković, Smiljana Tomašević, Branko Arsić, Igor Končar, Nenad Filipović*

S.1.4 – On Differentiating Synthetic and Real Data in Medical Applications – *Sandi Baressi Šegota, Nikola Anđelić, Daniel Štifanić, Jelena Štifanić, Zlatan Car*

11:00 - 11:30	Keynote speaker: Implementation Challenges of Interdisciplinary Machine Learning Projects Prof. Zoran Bosnić Chair: Smiljana Tomašević
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Session S.2: 11:30-13:45

AI in Medical Science part II

Chair: Marko Živanović

S.2.1 – Predicting Discus Hernia from MRI Images Using Deep Transfer Learning – *Tijana Geroski, Vesna Ranković, Vladimir Milovanović, Vojin Kovačević, Lukas Rasulić, Nenad Filipović*

S.2.2 – Application of Ensemble Machine Learning for Classification Problems on Very Small Datasets – *Ognjen Pavić, Lazar Dašić, Tijana Geroski, Marijana Stanojević Pirković, Aleksandar Milovanović, Nenad Filipović*

S.2.3 – An Unsupervised Image Segmentation Workflow for Extraction of Left Coronary Artery from X-ray Coronary Angiography – *Lazar Dašić, Ognjen Pavić, Tijana Geroski, Nenad Filipović*

S.2.4 – Artificial Intelligence in Intelligent Healthcare Systems - Opportunities and Challenges – *Anita Petreska, Blagoja Ristevski*

S.2.5 – Systematic Machine Learning Approach for Breast Cancer Survival Prediction – *Bojana Anđelković Čirković, Nenad Filipović*

S.2.6 – Application of Artificial Intelligence for Predicting of New Potential Inhibitors of Vitamin K Epoxide Reductase – *Marko Antonijević, Žiko Milanović, Edina Avdović, Jelena Đorović Jovanović, Dušan Dimić, Dušica Simijonović, Dejan Milenković, Zoran Marković*

S.2.7 – Automatic Segmentation and 3d Reconstruction of Patient- Specific Carotid Artery by Using Ultrasound Images – *Miloš Anić, Branko Arsić, Tijana Đukić, Smiljana Tomašević, Branko Gaković, Igor Končar, Nenad Filipović*

S.2.8 – Feature Selection for the Shear Stress Classification of Hip Implant Surface Topographies – *Aleksandra Vulović, Tijana Geroski, Nenad Filipović*

S.2.9 – Prediction of Development of Cancer Stem Cell Subpopulation by Machine Learning Model – *Dalibor Nikolić, Biljana Ljujić, Amra Ramović Hamzagić, Marina Gazdić Janković, Ana Mirić, Katarina Virijević, Dragana Šeklić, Milena Jovanović, Nikolina Kastratović, Ivica Petrović, Vladimir Jurišić, Nevena Milivojević, Marko Živanović, Nenad Filipović*

13:45 - 14:45	Buffet Lunch
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Session S.3: 14:45-15:30

AI in Economical Science

Chair: Vladimir Ranković

S.3.1 – Network Metrics Enhanced Real Estate Price Prediction Using Machine Learning Techniques – *Iva Veljković, Predrag Obradović, Marko Mišić*

S.3.2 – FPGA-Based Implementation of LSTM-RNN for Financial Time Series Analysis – *Nagihan Aydemir, Burcu Erkmen*

S.3.3 – HR Analytics: Opportunities and Challenges for Implementation in SME – *Željko Bolbotinović, Ranka Popovac, Dragan Vukmirović, Tijana Čomić, Nebojša Stanojević*

15:30 - 16:00	Keynote speaker: Deep Learning – New Paradigm in AI Medical Imaging/What Now? Prof. Zlatan Car Chair: Aleksandra Vulović
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16:00 - 16:30	Coffee Break
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Session S.4: 16:30-17:45

AI in Material Science

Chair: Bogdan Milićević

S.4.1 – Evaluation of Nano-object Magnetization Using Artificial Intelligence Approaches – *Sergey Mikhalev, Alessandro Surpi, Jacoppo Cardellini, Yolanda Pineiro, Jose Rivas, Francesco Valle, Valentin Dediu, Vitaly Goranov*

S.4.2 – Prediction of Subsonic Flutter Speeds for Composite Missile Fins Using Machine Learning – *Mirko Dinulović*

S.4.3 – Comparison of Local and global recoverable pruning on EfficientNetV2 – *Dan Tutelea, Dan Pescaru*

S.4.4 – An Emerging Trend: Open and Not So Open Licenses for Machine and Deep Learning – *Nadica Miljković, Vladimir Milovanović*

S.4.5 – PCL/PEG Polymers-suitable Materials for 3D – Bioprint of Scaffolds – *Nebojša*

Zdravković, Sara Mijailović, Jelena Dimitrijević, Nikolina Kastratović, Marko Živianović

Session S.5: 17:45-19:15

AI in Social Science

Chair: Marko Selaković

S.5.1 – Artificial Intelligence as an Accelerator of European Union Accession – *Dragan Dakić*

S.5.2 – Impact of the Deep Tech and Artificial Intelligence on Education and Innovation – *Ilija Arsenijević, Ana Kaplarević Mališić, Jelena Živković, Nenad Grujović, Nenad Filipović, Milica Kaplarević, Fatima Živić*

S.5.3 – Digital Empathy – *Dejan Masliković, Đurađ Grubišić*

S.5.4 – Towards Natural Language Processing for Romanian Historical Documents – *Daniela-Maria Cristea*

S.5.5 – Application of AI Chatbots in Social Care Interactions: Current Trends and Future Perspectives – *Nikolina Ljepava, Marko Selaković, Ana Miletić Vučković, Marija Gačić, Nenad Filipović*

S.5.6 – Genetic Programming Approach in Better Understanding of the Relationship Between the Number of Viable Cells and Concentration of O₂-, NO₂- and GSH Produced in Cancer Cells Treated With PD(II) Complexes – *Tamara Mladenović, Marko Živanović, Leo Benolić, Jelena Pavić, Nenad Filipović*

19:15- 19:45

Closing Ceremony