

**XXVIII International Conference on
Information, Communication and Automation Technologies
ICAT 2022**

Conference Programme

Time	Room: ROOM-01	Room: ROOM-02
Thursday, 16.06.2022.		
08:00-09:00	Registration	
08:30-09:00	Opening Ceremony	
09:00-10:00	Plenary Talk 1-1: Miroslav Krstić: Prescribed-Time Extremum Seeking for Mobile Robots and PDEs	
10:00-11:00	Plenary Talk 1-2 : Fabien Lotte: On Humans and Machines in Brain-Computer Interaction	
11:00-11:30	Coffee Break (30min)	
11:30-13:00	Session 1-1: AI and Data Science	
13:00-14:30	Lunch (90min)	
14:30-16:00	Session 1-2: Mechatronics and Control Systems	Tutorijal 1-1: Senka Krivić: Explainable AI and Explainable AI Planning
16:00-16:30	Coffee Break (30min)	
16:30-18:00	Session 1-3: Power Engineering	
19:30-22:00	Welcome Cocktail by Telemach	
Friday, 17.06.2022.		
09:00-10:00	Plenary Talk 2-1: Frede Blaabjerg: Power Electronics Technology – Quo Vadis	
10:00-11:00	Plenary Talk 2-2 : Haris Gačanin: Learning mechanism in next-generation wireless access	
11:00-11:30	Coffee Break (30min)	
11:30-13:00	Session 2-1: Power Engineering, Mechatronics and Control Systems	Workshop 2-1: NATO SPS G5894 QUANTUM5 WORKSHOP Pre Registration is required for the attendance: More info: https://www.tk.etf.unsa.ba
13:00-14:30	Lunch (90min)	
14:30-16:00	Session 2-2: Communication Engineering & Information Technologies	
16:00-16:30	Coffee Break (30min)	
16:30-18:00	Session 2-3: AI, ML, Data Science & Software Engineering	
19:30-22:00	Gala Dinner	
Saturday, 18.06.2022.		
09:00-10:30	Session 3-1: ICAT Special Session	
10:30-11:00	Coffee Break (30min)	
11:00-11:30	Closing Ceremony (30min)	
11:30-13:00	Lunch (90min)	
13:00-18:00	City Tour	

More detailed information about the Conference Program can be found at Conference Booklet.

Thursday, 16.06.2022.

11:30-13:00 Session 1-1: AI and Data Science

- Estimation of Washing Performance in Washing Machines with Neural Networks
(Yakup Aktaş, Merve Acer Kalafat)
- Development of Correction Models for Three-Electrode NO₂ Electrochemical Sensor
(Adis Panjević, Tarik Uzunovic, Baris Can Ustundag)
- Usage of user hate speech index for improving hate speech detection in Twitter posts
(Ehlimana Krupalija, Dženana Đonko, Haris Šupić)
- Classification of cardiovascular disease patients
(Emine Yaman, Fejsal Perva, Harun Tucaković)
- Explorative Evaluation of Heart Rate Variability Spectral Analysis Approaches
(Amina Tihak, Nahla Salaka, Dusanka Boskovic)

14:30-16:00 Session 1-2: Mechatronics and Control Systems

- Fuzzy-PI controller tuned with ICA: applied to 2 DOF robot control trajectory
(Yucef Zennir, Mourad Achouri)
- Semantic Visual Segmentation of a Mobile Robot Environment Using Deep Learning Model
(Jasmin Velagic, Vedin Klovo)
- 3D UAV Registration of Large Scale Environment Using Structure From Motion Based Approach
(Jasmin Velagic, Haris Balta)
- Economic Model Predictive Control of Industrial Demand Response
(Behzad Heydaryan Manesh, Naim Bajcinca)
- Model predictive control of demand response for large scale production lines and networks
(Javad Tousi, Mohammad Al Khatib, Naim Bajcinca)

16:30-18:00 Session 1-3: Power Engineering

- Calculation of the Electric Field Intensity and Magnetic Flux Density Generated by High Voltage Overhead Transmission Lines
(Ajdin Alihodzic, Adnan Mujezinovic, Emir Turajlic, Nedis Dautbasic)
- Volt-Var Control for Smart Cities with Integrated Public Transportation System
(Nermin Čolo, Senad Huseinbegović, Izudin Džafić)
- Real-Time Estimation of Instantaneous Power System Fundamental Frequency
(Vedin Klovo, Halil Lačević, Izudin Džafić)
- Experimental Determination of Grounding System Impulse Impedance under High Frequency Electromagnetic Interferences
(Nedis Dautbasic, Adnan Mujezinovic, Irfan Turkovic, Maja Muftic Dedovic, Ajdin Alihodzic)
- Graph Theory as an Engine for Real-Time Advanced Distribution Management System Enhancements
(Izudin Džafić)

Friday, 17.06.2022.

11:30-13:00 Session 2-1: Power Engineering, Mechatronics and Control Systems

- No Need to be Online to Attack - Exploiting S7-1500 PLCs by Time-Of-Day Block
(Wael Alsabbagh, Peter Langendörfer)
- Behavioral modeling of knitted shape memory membrane
(Ahmed Amine Chafik, Jaafar Gaber, Souad Tayane, Mohamed Ennaji)
- Mitigating Power Peaks in Automotive Power Networks by Exploitation of Flexible Loads
(Tobias Schürmann, Nils Kutter, Stefan Schwab, Sören Hohmann)
- Mixed-criticality communication scheme for networked mobile robots
(Shaban Guma, Aydin Sezgin, Naim Bajcinca)
- State of Charge Estimation on Constrained Embedded Devices
(Edin Omerovic, Edin Golubovic, Tarik Uzunovic)

14:30-16:00 Session 2-2: Communication Engineering & Information Technologies

- Quantum Channel Characteristics from the Point of View of Stability
(Patrik Burdiak, Filip Lauterbach, Jan Rozhon, Martina Slivova, Miroslav Voznak, Emir Dervisevic, Miralem Mehic, Matej Plakovic)
- Simulations of Denial of Service Attacks in Quantum Key Distribution Networks
(Emir Dervisevic, Filip Lauterbach, Patrik Burdiak, Jan Rozhon, Martina Slivova, Matej Plakovic, Mirza Hamza, Peppino Fazio, Miroslav Voznak, Miralem Mehic)
- Bloom filter based acceleration scheme for flow table lookup in SDN switches

- *(Enio Kaljic, Almir Maric, Pamela Njemcevic)*
- High-Speed FPGA-Based Ethernet Traffic Generator
(Matej Plakalovic, Enio Kaljic, Miralem Mehic)
- Improvement of Confidential Messages Secure Routing over Paths with Intersection in Cyber Resilient Networks
(Oleksandr Lemeshko, Oleksandra Yeremenko, Amal Mersni, Juraj Gazda)
- The Effects of Pilot-based Carrier Phase Estimation on Performance of Coherently Detected Signals Propagating in TWDP Channels
(Pamela Njemcevic, Enio Kaljic, Almir Maric)

16:30-18:00 Session 2-3: AI, ML, Data Science & Software Engineering

- PMU Spoof Detection via Image Classification Methodology against Repeated Value Attacks by using Deep Learning
(Alvin Huseinović, Yusuf Korkmaz, Halil Bisgin, Saša Mrdović, Suleyman Uludag)
- Computer Vision with 3D Point Cloud Data: Methods, Datasets and Challenges
(Jasmin Velagic, Amila Akagic, Senka Krivic, Harun Dizdar)
- Multilevel image thresholding based on Rao algorithms and Kapur's Entropy
(Emir Turajlic, Emir Buza, Amila Akagic)
- Application of Artificial intelligence in the diagnosis of Hepatitis C
(Amela Drobo, Lucija Džambo, Majda Đogić, Lemana Spahić Bećirović, Alisa Smajović, Ervina Bečić, Lejla Gurbeta Pokvić, Almir Badnjević)
- Deep Reinforcement Learning in Smart Grid: Progress and Prospects
(Amila Akagic, Izudin Džafić)

Saturday, 18.06.2022.

09:00-10:30 Session 3-1: ICAT Special Session

- Human-like Hitting Strategies for a Ball Bouncing Robot
(Chi-Cheng Cheng, Yi-Min Chiu, An-Sheng Liu)
- Application of Machine Learning for GUI Test Automation
(Ritu Walia)
- A Semantic Mapping System Based on Scene Classification for Indoor Mobile Robots
(Xu Song)
- A Methodology to Develop Extended Reality Applications for Exhibition Spaces in Museums
(Dayana Agudo, Christian Barreto-Paredes, Otto Parra, Maria Fernanda Granda)
- Alternator with controllable frequency and amplitude
(Isaac Chairez, Vadim Utkin)

— * —