



NTSP 2024 Conference Program

Organizers



Advertising partners



Partners



Medial Partners

Radioengineering

Proceedings of Czech and Slovak Technical Universities



ADVANCES IN ELECTRICAL
AND ELECTRONIC ENGINEERING



16. 10. 2024		Time
Registration		08:00-09:30
Opening speeches and organizing instructions		09:30-09:40
Session 1: Applied Electronics, Chairman: Ján KURTY		
1	<i>Finding Initial Estimates of Impedance Model of Li-Ion Battery via Interactive Analysis</i> Dalibor Bielek , Zdeněk Kolka, Viera Biolková, Kamil Jaššo	09:40
2	<i>Improving GPS Reliability in Emergency Vehicles: A Case Study on Interference Source Identification</i> Radovan Juran, Petr Musil , Michal Mahut, Petr Mlynek	10:00
3	<i>Testing Accelerometers on Centrifuge Using Rate Table AC1120Si and Temperature Chamber</i> Miroslav Matejček , Mikuláš Šostronek	10:20
Coffee break		10:40-11:00
Session 2: Applied Electronics, Chairman: Jozef PUTTERA		
4	<i>In-situ Imaging for Temperature Estimation in Laser Directed Energy Deposition with Wire Feedstock Using a Convolutional Neural Network</i> <i>Ph.D. Student Prize</i> Atieh Sahraeidolatkhaneh , Morgan Nilsen, Amit Kumar Mishra, Fredrik Sikström	11:00
5	<i>Artaban: Adaptive Control for Multidirectional Locomotion</i> Roman Ďurikovič , Zuzana Mačicová	11:20
6	<i>Use of Fractional-Order Lead Compensators to Increase the Robustness of Aircraft Control Systems</i> Ladislav Kopečný , Jakub Hnidka, Josef Bajer	11:40
7	<i>Photopolymer Quality Measurement for SLA 3D Printing Using EIS</i> (Online presentation) Tomáš Kolenský, Kamil Jaššo	12:00
8	<i>Deep Learning for Joint Gap Width Classification and Tack Weld Detection in Laser Beam Welding</i> (Online presentation) Yongcui Mi , Fredrik Sikström, Morgan Nilsen, Amit Kumar Mishra, Antonio Ancona	12:20
Lunch		12:40-14:00
Session 3: Signal Processing, Chairman: František NEBUS		
9	<i>Recognition and Classification of Direct Spread Spectrum Signals</i> <i>Ph.D. Student Prize</i> Jan Virgala , Marie Richterova, Pavel Herkele	14:00
11	<i>The Effect of Mechanical Stress on the Sensitivity of Fiberoptic Polarization Temperature Sensor</i> <i>Ph.D. Student Prize</i> Zdenek Vylezich , Martin Kyselak, Karel Slavicek, David Grenar, Zuzana Chalk	14:20
12	<i>Radar Data Generation Algorithm at the Planar Phased Antenna Array Output</i> <i>Ph.D. Student Prize</i> Jana L'oncová , Stanislava Gažovová, Ján Ochodnický	14:40
Coffee break		15:00-15:20



Session 4: Communication Engineering, Chairman: Marián BABJAK		
13	Tactical Wireless Network Management Challenges in Urban and Suburban Areas: Analysis of Coverage Ranges <u>Janusz Romanik</u> , Paweł Kaniewski, Edward Golan, Krzysztof Zubel	15:20
14	Generating and Testing Binary Random Sequences for Classified Information Protection Systems <u>Robert Wicik</u>	15:40
15	Secure Communication Planning in LoRaWAN Network Júlia Slavkovská, Patrik Heglas, <u>Ladislav Zemko</u> , Pavel Čičák	16:00
16	Security of Military Transmission in Public Mobile Radio Communication Systems <u>Štefan Gašo</u> , Marián Babjak	16:20
Dinner		17:00-19:00
17. 10. 2024		Time
Registration		08:00-09:00
Session 5: Microwave Engineering and Signal Processing in Military Applications, Chairman: Ján OCHODNICKÝ		
17	A New Method for Polyphase Coded Radar Signals Recognition Based on Dual Channel Deep Learning <u>Van Linh Nguyen</u> , Jiri Vesely, Vaclav Platenka	09:00
18	Radar Waveforms Based on Costas and Walsh-Hadamard Codes in Active Noise Jamming <u>Jozef Perďoch</u> , Zdeněk Matoušek, Miroslav Páček	09:20
19	Signal Processing from Sensors and Data Processing Using a Probability Model <u>Radoslav Masnica</u> , Jozef Štulrajter, Aurel Sabó	09:40
20	Scalarization of Multi-Function Sensor Scheduling Problem Jergus Suja, <u>Pavel Kulmon</u>	10:00
21	A Variant of the Larmor Frequency Calculation Bohumil Brtník, <u>David Matoušek</u>	10:20
Coffee break		10:40-11:00
Session 6: Informatics, Chairman: Jozef PERĎOCH		
22	Cyber Security Glossary-The Next Step <u>Ladislav Buřita</u> , Milan Jirsa, Josef Kaderka, Vlastimil Malý, Július Baráth, Michal Turčaník	11:00
23	Countermeasures Management in Cyber Defense Exercises <u>Martin Pavelka</u> , Ladislav Hudec <i>Ph.D. Student Prize</i>	11:20
24	Review of Intrusion Detection Systems Taxonomy, Techniques, Methods and Future Research Directions <u>Matúš Mikuláš</u> , Ivan Kotuliak <i>Ph.D. Student Prize</i>	11:40
25	Methodology of Bivalent Data Management in Oracle Database (Online presentation) <u>Michal Kvet</u>	12:00
Lunch		12:20-13:40
Advertising partner's Presentation		
1	DART – Surveillance Sensor Data Analysis Tool <u>Marek Náhlík</u> , Pavol Serbín	13:40
2	Innovative Approaches to Drone Detection and Tracking: Synergy of Sensors for Enhanced Airspace Security Marek Náhlík, <u>Pavol Serbín</u>	14:10



Session 7: Informatics, Chairman: Gabriel CIBIRA		
26	Federated Learning Approach to Classification of DDoS attacks by 2D-Convolutional Neural Network Bianca Badidová, Miloš Očkay, Martin Javurek, <u>Michaela Bil'anská Ondrejková</u> , Peter Krammer, Radoslav Forgáč <i>Ph.D. Student Prize</i>	14:40
27	Machine Learning and Transformers for Malware Analysis: Overview <u>Adam Gajdošík</u> , Ivan Kotuliak <i>Ph.D. Student Prize</i>	15:00
28	Advanced Industrial Espionage: Mobile Device as Anti-Forensic and Anonymization Tool <u>Sebastián Potocký</u> , Jozef Štulrajter, Michal Turčaník <i>Ph.D. Student Prize</i>	15:20
Coffee break		15:40-16:00
Session 8: Informatics, Chairman: Július BARÁTH		
29	Development of Malware Using Large Language Models <u>Matej Adamec</u> , Michal Turčaník <i>Ph.D. Student Prize</i>	16:00
30	A Contribution to the Prevailing Visibility Prediction Based on Neural Network Approach <u>Matúš Janok</u> , Radoslav Forgáč, Bianca Badidová <i>Ph.D. Student Prize</i>	16:20
31	The PCA and 1D-CNN Dimension Reduction Comparison for Hyperspectral Classification of Tree Species <u>Bianca Badidová</u> , Radoslav Forgáč, Miloš Očkay <i>Ph.D. Student Prize</i>	16:40
Conference Banquet - NTSP 2024 PhD Student Prize Award, Closing of the Conference		18:00
18. 10. 2024 (Post Conference Day)		
NTSP 2024 Technical Program Committee Final Session (09:00 – 12:00) Outdoor activities in vicinity of the Demänovská Dolina and West Tatras. (Warm cloths, waterproof jacket and outdoor boots are highly recommended.)		