

IWSSIP 2025 Technical Session Program

24 - 26 June 2025, Skopje, North Macedonia

* Each paper will have 15 min for presentation followed by 3 min for discussion.

Tuesday 24 June 2025

10:15 - 12:05	Image Processing 1 Chair: Tomislav Kartalov
● Brazilian Identity Document Recognition using Computer Vision Techniques Paula F. Torres, Valeria D. Feltrim, and Yandre M. G. Costa ● Graffiti and Covered Material Detections in Urban Images using Deep Learning Tacio Souza Bomfim, Eldman de Oliveira Nunes, A. Belen Moreno and Angel Sanchez ● Advancing 2D Image Modelling through Gaussian Splatting Techniques Martin Hornacek, Gregor Rozinaj, and Radoslav Vargic ● Software Feature Detection using Source Code Minimaps as Visual Signatures Munif Gebara Jr., Igor S. Wiese, and Yandre M. G. Costa ● Distance-Based Out-of-Distribution Image Detection using Spiking Patterns Alekselj Avramovic, Vedran Jovanovic, Slavica Gajic, Dajana Dimitric, Davor Sluga and Vladimir Risojevic ● Efficient Detection of Non-Lambertian Reflectance Behavior and Lambertian Surface Characterization using Minimal Angular Sampling in Light Fields Vivek Dwivedi, Javlon Tursunov, Jaromir Hrad, and Gregor Rozinaj	

Tuesday 24 June 2025

12:20 - 14:10	Image Processing 2 Chairs: Martin Hornacek and Ivan Minarik
• Constructing Virtual Prototypes in a Port Environment Using AR Technology Manjola Zeneli and Galia Marinova • Depth Map Interpolation for Novel View Synthesis Jaroslav Venjarski, Jozef Baáš, Stanislav Šidla, Gregor Rozinaj, and Marek Vančo • An Efficient Method to Detect both Insertion and Removal Attacks in 3D LiDAR Point Clouds for Autonomous Vehicle Security Yacine Bouhamidi, Kai Wang, and Jose-Ernesto Gomez-Balderas • Mask Refinement for Vehicle Camera Soiling via Linear Modeling of Border Intensity Transitions Tim Dieter Eberhardt, Eva Matz, Robin Schwager, Tin Stribor Sohn, and Wilhelm Stork • Enhancing Facial Recognition Through 3D Depth Map Optimization Kristina Korkutoska, Ljubinka Sandjakoska, Valentin Cvetanoski and Rasim Salkoski	

Tuesday 24 June 2025

15:10 - 16:20	Special Session on Radars and Remote Sensing Chair: Dusan Gleich, Venceslav Kafedziski
● Estimation of Physical Parameters of Objects using UAV SAR Dusan Gleich, Primoz Smogavec, and Marko Vovk ● Pulse Shaping in High Mobility Zak-OTFS Radar Sensing Venceslav Kafedziski and Goran Josifovski ● Optimal Dipole Antenna for GPR Applications Nikola Bošković, Aleksandar Atanasković, and Nebojša Dončov ● UAV Detection using Camera and Doppler Radar Pane Andov, Andrej Sarjas, Dusan Gleich	

Tuesday 24 June 2025

15:10 - 16:40	Miscellaneous (online) Chair: Tomislav Shuminoski
	Detecting Brazilian Real Banknotes under Various Lighting and Background Conditions Rafael S. Lima, Aura Conci Comparative analysis of the acceptance and usage of 5G in N Macedonia and Europe Andrijana Jankova Tosheska, Vladimir Atanasovski Underwater Image Enhancement Framework with Deep Background Light Estimation Module Ozan Demir, Metin Aktas, and Ender M. Eksioğlu Theoretical Insight in the Recent Design Methodology of an Advanced Optimal Space/Spatial-Frequency Filter Veselin N. Ivanović and Nevena Radović Preprocessing Techniques for Public H&E Histological Images: a Systematic Review Anna Clara Medina Roissmann, Leandro Alves Neves, Marcelo Zanchetta do Nascimento, and Tháina A. A. Tosta A Distributed AI Framework for Enhancing Situation Awareness in Natural Disasters Jieli Chen, Kah Phooi Seng, Chee Sheen Lim, Jeremy Smith, Li Minn Ang, and Hanyue Xu

Wednesday 25. June 2025

09:00 - 10:30	Communications 1 Chair: Tomislav Shuminoski
● A Comprehensive Analysis of Adversarial Attacks Against Android's Malware Detection Models Yago Henrique Pereira, Yandre M. G. da Costa, and Bruno Bogaz Zarpelao ● MobileSecureComm: A Next-Generation Tactical Communication Platform for Land, Sea and Air Operations Rexhep Mustafovski, Aleksandar Risteski and Tomislav Shuminoski ● Proposal of a Modular Framework for Building Network Infrastructure for Massively Scalable Data Centers for Private Cloud and AI Workloads Spas Georgiev and Kamelia Nikolova ● The Convergence of IoT, AI, and Blockchain in Agriculture: A Survey and Research Challenges Avni Rustemi, Fisnik Dalipi, and Aleksandar Risteski ● Color To Grayscale By Quantization and Integration Ali Alsam and Hans J. Rivertz	

Wednesday 25. June 2025

10:30 - 12:00	Communications 2 Chair: Venceslav Kafedziski
● The impact of certain galvanic faults on QoS parameters for IPTV Services over VDSL Namir Škaljo and Alen Begović ● Detecting service quality issues of adaptive streaming video traffic in mobile networks – a practical approach Marton Molnar, Attila Bader, and Alija Pasic ● On Queueing Delay in a Model of Wireless Network Node with Breakdowns Wojciech M. Kempa and Karolina Pawlik ● Blind Parameters Estimation for FHSS Signals under Partial-band Observation Ganghyuk Jeon, Yooncheol Choi, and Dongweon Yoon ● Redefining Hybrid Meetings through Immersive Digital Twins with Avatar Driven Physical Representation and Dynamic Remote Interaction Javlon Tursunov, Yevgeniya Sulema, Tomas Zeman, Vivek Dwivedi, Gregor Rozinaj	

Wednesday 25. June 2025

15:15 - 16:45	Speech Processing and Human-Machine Interaction Chairs: Karolina Gabor-Siatkowska and Tijana Nosek
• Beyond Words: Gaze-Enhanced LLM-based Dialogue System for Therapeutic Purposes Karolina Gabor-Siatkowska, Izabela Stefaniak and Artur Janicki • Exploiting voice conversion in creating new TTS voices Tijana Nosek, Siniša Suzić, Nikola Simić, Milan Sečujski, Darko Pekar and Vlado Delić • From CHAT towards ASR: A Hybrid Pipeline for Constructing the HUKILC-CO Hungarian Child Speech Dataset Yue Luo, Xihang Xia, Kinga Jelencsik-Matyus, Shaimaa Alwaisi and Peter Mihajlik • Slovenian End-to-End Automatic Speech Recognition and Impact of Emotional Speech Andrej Zgank and Gregor Donaj • Body Pose Estimation and Hand Position Detection for Hand-by-Hand Human-Robot Interaction Gökhan Erdemir, Michael Liles, and Erkan Kaplanoglu	

Thursday 26. June 2025

09:00 - 10:15	Power Signal Processing, Microgrids and IoT Chair: Galia Marinova
	AI-assisted Optimal Energy Management in Microgrids Vassil Guliashki and Galia Marinova Enhancing Microgrid Security: Web-Based Anomaly Detection Using Autoencoder Behar Haxhismajli, Edmond Hajrizi, Besnik Qehaja, Vasil Guliashki, Galia Marinova Transfer Learning for Electricity Demand Forecasting in Nordic Cities: A Case Study of Copenhagen and Reykjavik Mahshid Javidsharifi, Hamoun Pourroshanfekr Arabani, Juan C. Vasquez, Josep M. Guerrero Anomaly Detection in Digital Twins: Leveraging AI for Real-Time Insight Erilda Muka, Emiliano Mankolli, and Galia Marinova

Thursday 26. June 2025

Thursday	Biomedical Signal Processing
10:30 - 12:20	Chair: Hua-Liang Wei
Cancer Identification in Bowel Tissue Images using CNNs and Transformers Sergio A. da Silva Jr., Maysa P. A. da Silva, Gustavo Z. Felipe, Loris Nanni, Jacqueline N. Zandoni, Juliana V. C. Martins-Perles, Yandre M. G. Costa Automation of morphometric analyses in small intestine images Gabriel H. Costanzi, Fabiana G. M. Lima, Jacqueline N. Zandoni, Juliana V. C. Martins-Perles, Franklin C. Flores, and Yandre M. G. Costa Enhanced Alzheimer's Diagnosis with a Lightweight Transformer: A Multimodal Fusion of Sagittal MRI and Clinical Data Akeem Temitope Otapo, Ghazaleh Khodabandelou, Zuheng Ming and Alice Othmani Colorectal Carcinogenesis Identification using Microphotographs of Rat Liver Antonio J. P. Cardenas, Carla C. O. Bernardo, Andre L. R. G. Sevilha, Maria Luiza M. Sergio, Roberto B. Bazotte, Juliana V. C. Martins-Perles, Jacqueline N. Zandoni, Franklin C. Flores, and Yandre M. G. Costa Manna Omax: Pulmonary Disease Detection using Texture Properties and Dissimilarity Joao Vitor D. Ferraz, Lucas O. Teixeira, Munif Gebara Jr., Christiane M. Schweitzer, Yandre M. G. Costa, and Linnyer Beatrys R. Aylon	

Thursday 26. June 2025

Thursday	Machine Learning
12:20 - 13:50	Chair: Giorgia Nieddu
• System Identification and Interpretable Modelling of Dynamical Systems with Small Data using Sparse Bayesian Learning Hua-Liang Wei • Contrastive Dissimilarity for Writer Identification: a proof of concept Fabio Pignelli, Lucas O. Teixeira, Diego Bertolini, Loris Nanni, George D. C. Cavalcanti, and Yandre M. G. Costa • Open Set Recognition using Dissimilarity Vectors Leandro Magno C. Silva, Franklin Cesar Flores, and Yandre M. G. da Costa • The Role of AI in Supporting Mathematical Reasoning for Electronics Problems Giorgia Nieddu, Bojan Glushica, Marko Kamilovski, Silvio Marcello Pagliara, Maria Cristina Carrisi and Branislav Gerazov	