

Program Summary

September 23rd, 2020 (Wednesday)

9:00	OPENING <i>Chairman: Adam Dąbrowski</i>
9:15-10:00	TUTORIAL I: Michael Hübner, Flexible hardware architectures for robust Cyberphysical systems <i>Chairman: Adam Dąbrowski</i>
10:00-10:20	Coffee Break
10:20-11:40	SESSION 1: Biosignal Processing <i>Chairman: Damian Cetnarowicz</i>
10:20	Barbara Wilk, Małgorzata Augustyn, Grzegorz Wilk, Algorithm for Human Fall Detection Based on Acceleration Measurement
10:40	Jakub Garstka, Michał Strzelecki, Pneumonia detection in X-ray chest images based on convolutional neural networks and data augmentation methods
11:00	Ibtissem Cherfa, Anissa Mokraoui, Abdenour Mekhmoukh, Karim Mokrani, Adaptively Regularized Kernel-Based Fuzzy C-Means Clustering Algorithm Using Particle Swarm Optimization for Medical Image Segmentation
11:20	T. K. M. Lee, H. W. Chan, K. H. Leo, E. Chew, Ling Zhao, S. Sanei, Surrogate Data for Deep Learning Architectures in Rehabilitative Edge Systems
11:40	Javier Hoffmann, Safdar Mahmood, Priscile Suawa Fogou, Nevin George, Solaiman Raha, Sabur Safi, Kurt JG Schmailzl, Marcelo Brandalero, Michael Hübner, A Survey on Machine Learning Approaches to ECG Processing
12:00-12:20	Coffee Break
12:20-14:00	SESSION 2: DSP Theory & Implementation 2 <i>Chairman: Paweł Pawłowski</i>
12:20	Eugene V. Rybenkov, Nick A. Petrovsky, High performance multiplier-less pipelined FPGA architecture for 2-D non-separable quaternionic filter banks
12:40	Maciej Niedźwiecki, Marcin Ciołek, Artur Gańcza, Piotr Kaczmarek, A New Method of Noncausal Identification of Time-varying Systems
13:00	Cao Silei, Li Tianyu, Wang Yao, Robust Beamforming Method Based on Doublelayer Reconstruction of Covariance Matrix
13:20	Radu Matei, Analytic Design of Uniform Circular Filter Banks
13:40	Javier Hoffmann, Marcelo Brandalero, Michael Hübner, TIRUB: A Safety and Energy-Aware Scheduling Algorithm
14:00-15:00	Lunch Break
15:00-15:45	TUTORIAL II: Gilbert Strang, The Victory of Orthogonality <i>Chairman: Adam Dąbrowski</i>
15:45	Closing of Day 1

September 24th, 2020 (Thursday)

9:00-9:45	TUTORIAL III: Georgios Keramidas, The SMART4ALL toolbox for boosting technology and business development in South, Eastern and Central Europe <i>Chairman: Adam Dąbrowski</i>
9:45-10:00	Coffee Break
10:00-12:00	SESSION 3: Image Processing <i>Chairman: Adam Konieczka</i>
10:00	Imen Kadri, Gabriel Dauphin, Anissa Mokraoui, Zied Lachiri, Stereoscopic Image Coding Using a Global Disparity Estimation Algorithm Optimizing the Compensation Scheme Impact
10:20	Dirk Siegmund, Luís Rüger Sacco, Arjan Kuijper, Issue Based OCR Error Prediction in Video Streams
10:40	Mustafa Othman, Ken Chen, Anissa Mokraoui, A Study of QoE-Aware Adaptation Mechanism for DASH Video Streaming based on Objective Visual Quality Assessment

11:00	Kacper Podbucki, Jakub Suder, Tomasz Marciniak, Adam Dąbrowski, CCTV based system for detection of anti-virus masks
11:20	Karol Piniarski, Paweł Pawłowski, Adam Dąbrowski, Improved pedestrian detection by adjustment of segmented ROI in thermal night vision
11:40	Julian Balcerek, Adam Konieczka, Karol Piniarski, Paweł Pawłowski, Classification of road surfaces using convolutional neural network
12:00-12:30	Coffee Break
12:30-14:30	SESSION 4: DSP Implementations <i>Chairman: Julian Balcerek</i>
12:30	Przemysław Falkowski-Gilski, Marek Kulawiak, Marcin Kulawiak, Geospatial Coverage and Signal Quality Measurements of Terrestrial DAB+ Network in Northern Poland
12:50	Piotr Kłosowski, Artificial intelligence application to improve the performance of distance learning servers during the coronavirus pandemic threat period
13:10	Marek Szlachetka, Dariusz Borkowski, Jarosław Was, Stationary environment models for Advanced Driver Assistance Systems
13:30	Joanna Stanisław, Konrad Lis, Tomasz Kryjak, Marek Gorgon, Optimisation of the PointPillars network for 3D object detection in point clouds
13:50	Agata Dąbrowska, Michał Adamski, Adam Dąbrowski, Tomasz Jankowski, Michał Kliczkowski, Environmental quality monitoring with unmanned aircraft vehicle
14:10	Paweł Pawłowski, Rafał Długosz, Adam Dąbrowski, Switched-capacitor finite impulse response rotator filter
14:30	Closing of Day 2

September 25th, 2020 (Friday)

9:00-9:45	TUTORIAL IV: Antonio Montalvo, SMART4ALL Open Calls, the right funding instrument to boost technology and business development in South, East and Central Europe <i>Chairman: Adam Dąbrowski</i>
9:45-10:00	Coffee Break
10:00-11:20	SESSION 5: Audio Processing 1 <i>Chairman: Andrzej Meyer</i>
10:00	Maciej Błaszke, Damian Koszewski, Determination of Low-Level Audio Descriptors of a Musical Instrument Sound Using Neural Network
10:20	Adam Kurowski, Szymon Zaporowski, Andrzej Czyżewski, 1D convolutional context-aware architectures for acoustic sensing and recognition of passing vehicle type
10:40	Marta Stefaniak, Andrzej Czyżewski, Comparison of two methods of sound extraction from guitar string video recordings
11:00	Maciej Walczyński, Patryk Grzybała, Selected methods of parametrization in problem of automatic classification classical music from the Renaissance era against the classical works from other eras
11:20	Tomasz Grzywalski, Szymon Drgas, Speech enhancement by iterating forward pass through U-net
11:40-12:00	Coffee Break
12:00-13:20	SESSION 6: Audio Processing 2 <i>Chairman: Szymon Drgas</i>
12:00	Michał Łuczyński, Andrzej Dobrucki, Stefan Brachmański, Active tone elimination algorithm using FFT with interpolation and zero-padding
12:20	Katarzyna Kotarba, Michał Kotarba, Efficient detection of specific language impairment in children using ResNet classifier
12:40	Adam Dustor, Speaker verification with TIMIT corpus - some remarks on classical methods
13:00	Dawid Weber, Szymon Zaporowski, Daniel Korzekwa, Constructing a Dataset of Speech Recordings with Lombard Effect
13:30	Closing of Conference