

Program Summary

September 19th, 2018 (Wednesday)

9:00	OPENING (Room 201) <i>Chairman: Adam Dąbrowski</i>	
9:15-10:00	TUTORIAL I: Bart M. ter Haar Romeny, Vision for Vision – Deep Learning in Retinal Image Analysis <i>Chairman: Adam Dąbrowski</i>	
10:00-10:20	Coffee Break	
10:20-11:40	SESSION 1: DSP Theory & Implementation 1 (Room 201) <i>Chairman: Tomasz Marciniak</i>	SESSION 2: Image Processing 1 (Room 202) <i>Chairman: Bart M. ter Haar Romeny</i>
10:20	Grzegorz Szwoch, Suppression of distortions in signals received from Doppler sensor for vehicle speed measurement	Faezeh Fallah, Bin Yang, Sven S. Walter, Fabian Bamberg, Hierarchical Feature-learning Graph-based Segmentation of Fat-Water MR Images
10:40	Marek Kulawiak, Programmatic Simulation of Laser Scanning Products	Jalil Nourmohammadi-Khiarak, Samaneh Mazaheri, Rohollah Moosavi-Tayebi, Hamid Noorbakhsh-Devlugh, Object Detection utilizing Modified Auto Encoder and Convolutional Neural Networks
11:00	Fatih Serdar Sayin, Sertan Ozen, Ulvi Baspinar, Hand Gesture Recognition by Using sEMG Signals for Human Machine Interaction Applications	Emre Canayaz, Veysel Gökhan Böcekçi, Comparison of Performance of Different Background Subtraction Methods for Detection of Heavy Vehicles
11:20	Jerzy Fiołka, Preliminary investigation of the in-cylinder pressure signal using Teager energy operator	Grzegorz Sarwas, Sławomir Skoneczny, FSIFT based feature points for face hierarchical clustering
11:40-12:00	Coffee Break	
12:00-14:00	SESSION 3: DSP Theory & Implementation 2 (Room 201) <i>Chairman: Adam Dąbrowski</i>	SESSION 4: Image Processing 2 (Room 202) <i>Chairman: Paweł Pawłowski</i>
12:00	Krzysztof Krupa, Marcin Grochowina, Microprocessor implementation of the sound source location process based on the correlation of signals	Marcin Małacz, Grzegorz Sarwas, Crowd counting using complex convolutional neural network
12:20	J. Kotus, Determination of the Vehicles Speed Using Acoustic Vector Sensor	Michał Bednarek, Krzysztof Walas, Simulated Local Deformation & Focal Length Optimisation For Improved Template-Based 3D Reconstruction of Non-Rigid Objects
12:40	Michał Pielka, Paweł Janik, Małgorzata Aneta Janik, Zygmunt Wróbel, An adaptive transmission algorithm for an inertial motion capture system in the aspect of energy saving	S. Cygert, A. Czyżewski, Vehicle detector training with labels derived from background subtraction algorithms in video surveillance
13:00	Marek Parfieniuk, Sang Yoon Park, A critique of some rough approximations of the DCT	Szymon Zaporowski, Joanna Gołębiewska, Bożena Kostek, Julia Piltz, Audio-visual aspect of the Lombard effect and comparison with recordings depicting emotional states
13:20	Tomasz Grzywalski, Szymon Drgas, Application of recurrent U-net architecture to speech enhancement	Ba chien Thai, Anissa Mokraoui, Basarab Matei, HDR Image Tone Mapping Approach based on Near Optimal Separable Adaptive Lifting Scheme
14:00-15:00	Lunch	
15:00	TUTORIAL II: Heinrich Theodor Vierhaus, Migrating Electronic Systems from Fault Tolerant Computing to Error Resilience <i>Chairman: Adam Dąbrowski</i>	
15:50-17:30	SESSION 5: DSP Theory & Implementation 3 (Room 201) <i>Chairman: Julian Balcerek</i>	SESSION 6: Image Processing 3 (Room 202) <i>Chairman: Adam Konieczka</i>
15:50	Adam Borowicz, On Using Quaternionic Rotations for Independent Component Analysis	Piotr Janus, Tomasz Kryjak, Hardware implementation of the Gaussian Mixture Model foreground object segmentation algorithm working with ultra-high resolution video stream in real-time

16:10	Nick A. Petrovsky, Eugene V. Rybenkov, Alexander A. Petrovsky, Two-dimensional non-separable quaternionic paraunitary filter banks	Marcin Kocielek, Peter Bajcsy, Mary Brady, Antonio Cardone, Interpolation-Based Gray-Level Co-Occurrence Matrix Computation for Texture Directionality Estimation
16:30	Radu Matei, Elliptically-Shaped IIR Digital Filters Designed Using Frequency Transformations	Marcin Kocielek, Michal Strzelecki, Szymon Szymajda, On the influence of the image normalization scheme on texture classification accuracy
16:50	Yaprak Eminaga, Adem Coskun, Izzet Kale, IIR Wavelet Filter Banks for ECG Signal Denoising	Michał Bednarek, Krzysztof Walas, Spatial Transformations in Deep Neural Networks
17:10	Paweł Pawłowski, Adam Pawlikowski, Rafał Długosz, Adam Dąbrowski, Programmable, switched-capacitor finite impulse response filter realized in CMOS technology for education purposes	Jakub Bednarek, Karol Piaskowski, Michał Bednarek, Methods of Enriching The Flow of Information in The Real-Time Semantic Segmentation Using Deep Neural Networks
18:00	Welcome Party	

September 20th, 2018 (Thursday)

9:00-9:45	TUTORIAL III: Paweł Strumiłło, Electronic Systems and Interfaces Aiding the Visually Impaired <i>Chairman: Adam Dąbrowski</i>	
9:45-10:00	Coffee Break	
10:00-11:40	SESSION 7: Biomedical & Biometric Apps. 1 (Room 201) <i>Chairman: Michał Strzelecki</i>	SESSION 8: Audio Processing 1 (Room 202) <i>Chairman: Szymon Drgas</i>
10:00	Jakub Jurek, Marek Kociński, Andrzej Materka, Are Losnegård, Lars Reisætery, Ole J. Halvorsen, Christian Beisland, Jarle Rørvik, Arvid Lundervold, Dictionary-based through-plane interpolation of prostate cancer T2-weighted MR images	Akira Ikuta, Hisako Orimoto, Fuzzy Bayesian Filter for Sound Environment by Considering Additive Property of Energy Variable and Fuzzy Observation in Decibel Scale
10:20	Jakub Jurek, Mateusz Peleszy, Andrzej Wojciechowski, Artur Klepaczko, Marek Kociński, Andrzej Materka, Are Losnegård, Lars Reisætery, Ole J. Halvorsen, Christian Beisland, Jarle Rørvik, Arvid Lundervold, CRF-Based Clustering of Pharmacokinetic Curves from Dynamic Contrast-Enhanced MR Images	Cezary Wernik, Grzegorz Ulacha, Application of adaptive Golomb codes for lossless audio compression
10:40	Carlos Vinhais, Marek Kociński, Andrzej Materka, Centerline-Radius Polygonal-Mesh Modeling of Bifurcated Blood Vessels in 3D Images using Conformal Mapping	Karolina Marciniuk, Maciej Szczodrak, Andrzej Czyżewski, An application of acoustic sensors for the monitoring of road traffic
11:00	Marcin Grochowina, Lucyna Leniowska, Design and implementation of a device supporting automatic diagnosis of arteriovenous fistula	Damian Koszewski, Bożena Kostek, Low-level audio descriptors-based analysis of music mixes from different Digital Audio Workstations – case study
11:20	Lukasz Kubus, Alexander Yastrebov, Katarzyna Poczeta, Magdalena Poterala, The use of fuzzy cognitive maps in evaluation of prognosis of chronic heart failure patients	Przemysław Falkowski-Gilski, Transmitting Alarm Information in DAB+ Broadcasting System
11:40-12:00	Coffee Break	
12:00-13:00	SESSION 9: DSP Implementations (Posters) <i>Chairman: Damian Cetnarowicz</i>	
	Piotr Kłosowski, Deep Learning for Natural Language Processing and Language Modelling	
	Władysław Magiera, Urszula Libal, Statistical properties of signals approximated by orthogonal polynomials and Schur parametrization	
	A.A.Kim, O.O.Lukovenkova, Yu.V.Marapulets, A.B.Tristanov, Using a sparse model to evaluate the internal structure of impulse signals	
	Tomasz Maka, Mirosław Lazoryszczak, Detecting the Number of Speakers in Speech Mixtures by Human and Machine	
	Janusz Rafałko, Marking the Allophones Boundaries Based on the DTW Algorithm	
	Adam Konieczka, Ewelina Michałowicz, Karol Piniarski, Infrared thermal camera-based system for tram drivers warning about hazardous situations	
	Adam Bykowski, Szymon Kubiński, Feature matching and ArUco markers application in mobile eye tracking studies	
	Marianna Parzych, Tomasz Marciniak, Adam Dąbrowski, Adaptive methods of time-dependent crowd density distribution visualization	
	Julian Balcerek, Mateusz Łuczak, Paweł Pawłowski, Adam Dąbrowski, Automatic recognition of image details using stereovision and 2D algorithms	
	Zenon Kidoń, Jerzy Fiołka, Evaluation postural stability using complex-valued data Fourier analysis of the follow-up posturographic trajectories	
13:00-14:00	Lunch	
14:30-18:00	Social Event	
18:00	Banquet	

September 21st, 2018 (Friday)

9:00-9:45	TUTORIAL IV: Adam Dąbrowski, Contemporary technologies and techniques for processing of human eye images <i>Chairman: Michał Strzelecki</i>	
9:45-10:00	Coffee Break	
10:00-11:40	SESSION 10: Biomedical & Biometric Apps. 2 (Room 201) <i>Chairman: Paweł Strumillo</i>	SESSION 11: Speech Processing (Room 202) <i>Chairman: Krzysztof Sozański</i>
10:00	Artur Klepaczko, Martyna Muszelska, Eli Eikefjord, Jarle Rørvik, Arvid Lundervold, Automated determination of arterial input function in DCE-MR images of the kidney	Hisako Orimoto, Akira Ikuta, Noise Cancellation Method for Speech Signal by Using an Extension Type UKF
10:20	Michał Strzelecki, Artur Klepaczko, Martyna Muszelska, Eli Eikefjord, Jarle Rørvik, Arvid Lundervold, An artificial neural network for GFR estimation in the DCE-MRI studies of the kidneys	Marzena Mięsikowska, Speech Intelligibility in the presence of X4 Unmanned Aerial Vehicle
10:40	Artur Klepaczko, Piotr Skulimowski, Michał Strzelecki, Ludomir Stefańczyk, Eli Eikefjord, Jarle Rørvik, Arvid Lundervold, Numerical simulation of the b-SSFP sequence in MR perfusion-weighted imaging of the kidney	Hugo Cordeiro, Carlos Meneses, Low band continuous speech system for voice pathologies identification
11:00	Baixiang Zhao, John Soraghan, Gaetano Di-caterina, Lykourgos Petropoulakis, Derek Grose, Trushali Doshi, Automatic 3D segmentation of MRI data for detection of head and neck cancerous lymph nodes	Maxim Vashkevich, Elias Azarov, Alexander Petrovsky, Yuliya Rushkevich, Features extraction for the automatic detection of ALS disease from acoustic speech signals
11:20-11:40	Coffee Break	
11:40-13:00	SESSION 12: Communication Apps. (Room 201) <i>Chairman: Alexander Petrovsky</i>	SESSION 13: Audio Processing 2 (Room 202) <i>Chairman: Andrzej Meyer</i>
11:40	Marek Kulawiak, Przemysław Falkowski-Gilski, Marcin Kulawiak, DAB+ Coverage Analysis: a New Look at Network Planning using GIS Tools	Tatsiana Viarbitskaya, Andrzej Dobrucki, Audio processing with using Python language science libraries
12:00	Anatoliy Platonov, Ievgen Zaitsev, Perfect Low Power Narrowband Transmitters for Dense Wireless Sensor Networks	Michał Łuczyński, Stefan Brachmański, Andrzej Dobrucki, Active elimination of tonal components in acoustic signals
12:20	Jan Wietrzykowski, Probabilistic reasoning for indoor positioning with sequences of WiFi fingerprints	Maciej Sabiniok, Stefan Brachmański, Analysis of application possibilities of Grey System Theory to detection of acoustic feedback
12:40	Paweł Pawłowski, Karol Piniarski, Adam Dąbrowski, Selection and tests of lossless and lossy video codecs for advanced driver-assistance systems	Krzysztof Sozański, Anna Sozańska, Low Frequency Loudspeaker Measurements Using An Anechoic Acoustic Chamber
13:00	CLOSING (Room 201)	
13:15-14:00	Lunch	