



# Program

24<sup>th</sup> International Conference on Systems, Signals and Image Processing  
**May 22-24, 2017, Poznań, Poland**

## MONDAY, 22 May 2017

8:00 - 15:00	Registration	
9:00 - 9:20	Opening of the IWSSIP 2017 conference (C-7)	
9:20 - 10:20	<b>Plenary lecture (C-7) – Session Chair: Marek Domański</b> <b>Depth Based Image Processing for Videogrammetry and 3D Endoscopy/Microscopy</b> <i>Ralf Schäfer</i>	
10:20 - 10:50	Coffee break	
10:50 - 12:20	Signal processing - 1 (C-12) – Chair: O. Stankiewicz	Image and Video Processing - 1 (C-13) – Chair: R. Stasiński
	<b>Face Detection Speed Improvement using Bitmap-based Histogram of Oriented Gradients</b> <i>A. Dehghani, D. Moloney, X. Xu</i>	<b>Stochastic spectral-spatial permutation ordering combination for nonlocal morphological processing</b> <i>O. Lézoray</i>
	<b>A Block-based Noise Level Estimation from X-ray Images in SVD Domain</b> <i>E. Turajlić, N. Škaljo, A. Begović</i>	<b>Removing contaminated data for illumination-robust face recognition</b> <i>Z. Xu, Z. Lu, W. Li, Q. Liao</i>
	<b>Real-Time Traffic Sign Recognition using Color Segmentation and SVM</b> <i>S. Ardianto, C.-J. Chen, H.-M. Hang</i>	<b>Local Statistics Estimation For Rapid Frequency Selective Extrapolation</b> <i>N. Genser, J. Seiler, A. Kaup</i>
	<b>Improving matching performance of the keypoints in images of 3D scenes by using depth information</b> <i>K. Matusiak, P. Skulimowski, P. Strumiłło</i>	<b>Motion Artifacts Free Image Resolution Enhancement Exploiting Image Priors</b> <i>K. Malczewski</i>
	<b>Temporal Enhancement of Graph-Based Depth Estimation Method</b> <i>D. Mieloch, A. Dziembowski, A. Grzelka, O. Stankiewicz, M. Domański</i>	<b>Signal Analysis on the Ball: Design of Optimal Basis Functions with Maximal Multiplicative Concentration in Spatial and Spectral Domains</b> <i>W. Nafees, Z. Khalid, R. A. Kennedy</i>
12:20 - 13:40	Lunch break	
13:40 - 15:20	Signal processing - 2 (C-12) – Chair: J. Zarzycki	Coding (C-13) – Chair: R. Schäfer
	<b>Application of B-Splines FFD Image Registration in Breast Cancer Radiotherapy Planning</b> <i>M. Wodzinski, A. Skalski, P. Kedzierawski, T. Kuszewski</i>	<b>Reinforcement Learning for Video Encoder Control in HEVC</b> <i>P. Helle, H. Schwarz, T. Wiegand, K.-R. Müller</i>
	<b>Non-contact signal detection and processing techniques for cardio-respiratory thoracic activity</b> <i>D. Shahu, I. Baxhaku, A. Rakipi</i>	<b>Efficient frame-compatible stereoscopic video coding using HEVC Screen Content Coding</b> <i>J. Samelak, J. Stankowski, M. Domański</i>
	<b>Image Compressive Sensing Using Group Sparse Representation via Truncated Nuclear Norm Minimization</b> <i>T. Geng, G. Sun, Y. Xu, Z. Li</i>	<b>Software and Hardware HEVC Encoding</b> <i>J. Kufa, T. Kratochvíl</i>
	<b>Doppler measurement of liquid flow in pipe using decimation and parametric spectral estimation method</b> <i>P. Biernacki</i>	<b>Homogenous HEVC video transcoding by transform coefficient removal</b> <i>K. Wegner, D. Karwowski, K. Klimaszewski, J. Stankowski, O. Stankiewicz, T. Grajek</i>
	<b>Efficient Schur Parametrization and Orthogonal Modeling of Near-Stationary Stochastic Processes</b> <i>A. Wielgus, J. Zarzycki</i>	<b>Fast HEVC Intra Coding Decision based on Statistical Cost and Corner Detection</b> <i>B. Min, Z. Xu, R. C. C. Cheung</i>
	<b>Real-time estimation of travel speed using urban traffic information system and CCTV</b> <i>Y.-K. Ki, J.-W. Choi, H.-J. Joun, G.-H. Ahn, K.-C. Cho</i>	<b>Encoding mode selection in HEVC with the use of noise reduction</b> <i>O. Stankiewicz, K. Wegner, D. Karwowski, J. Stankowski, K. Klimaszewski, T. Grajek</i>
15:20 - 15:40	Coffee break	
15:40 - 16:30	Special session (C-12) – Immersive visual technologies Recent developments in virtual navigation and free-viewpoint television MPEG-I: New standardization project on 360-degree video and its extensions	
17:00 - 21:00	Social event	

## TUESDAY, 23 May 2017

8:30 - 15:00	Registration	
9:30 - 10:30	<b>Plenary lecture (C-7) – Chair: Marek Domański</b> <b>Information Fusion in Some Image Machine Learning Applications</b> <i>Hsueh-Ming Hang</i>	
10:30 - 11:00	Coffee break	
11:00 - 12:30	Signal processing - 3 (C-12) – Chair: S. Maćkowiak	Multimedia signal processing - 1 (C-13) – Chair: M. Niedźwiecki
	<b>Choice of Optimal Measurement Conditions for Calculating the Correlation between EMA Sensor and Video Marker Position Coordinates in Electromagnetic Articulography</b> <i>R. Wielgat, Ł. Mik, A. Lorenc, A. Truchan, M. Szostek</i>	<b>On Using of Physical Layer Parameters of xDSL Transceivers for Troubleshooting</b> <i>N. Škaljo, A. Begović, E. Turajlić, N. Behlilović</i>
	<b>Hierarchical Co-Segmentation of 3D Point Clouds for Indoor Scene</b> <i>Y. Lin</i>	<b>Towards Scalable Streaming to SAGE2 Video Walls</b> <i>S. Ubik, Z. Travnicek</i>
	<b>A Taxonomoy and Analysis of Digital Image Forgery Detection Techniques</b> <i>N. Kanwal, J. S. Bhullar, L. Kaur, A. Girdhar</i>	<b>An analysis of the applicability of the TFD IP option for QoS assurance of multiple video streams in a congested network</b> <i>R. R. Chodorek, A. Chodorek</i>
	<b>Adaptive Method For Multi Colored Text Binarization</b> <i>A. Das, S. Chowdhury</i>	<b>CrowdSync: Synchronization of User Generated Videos using Crowdsourcing</b> <i>R. M. C. Segundo, M. N. de Amorim, C. A. S. Santos</i>
	<b>Fast Cloud Image Segmentation with Superpixel Analysis based Convolutional Networks</b> <i>L. Wu, J. He, M. Jian, J. Zhang, Y. Zou</i>	<b>Image Symmetries: The Right Balance between Evenness and Perception</b> <i>F. Guerrini, A. Gnutti, R. Leonardi</i>
12:30 - 13:50	Lunch break	
13:50 - 15:30	Image and Video Processing - 2 (C-12) – Chair: A. Materka	Multimedia signal processing - 2 (C-13) – Chair: Hsueh-Ming Hang
	<b>On extracting skeletons from binary 3D images</b> <i>P. Zasiński, M. Kociński, A. Materka</i>	<b>Speech/music discrimination for analysis of radio stations</b> <i>S. Kacprzak, B. Chwiećko, B. Ziółko</i>
	<b>Towards multi-scale personalized modeling of brain vasculature based on magnetic resonance image processing</b> <i>M. Kociński, A. Materka, A. Deistung, J. Reichenbach, A. Lundervold</i>	<b>Spoken language clustering in the i-vectors space</b> <i>S. Kacprzak</i>
	<b>An approach to image segmentation based on shortest paths in graphs</b> <i>A. Brzoza, G. Muszyński</i>	<b>Enhancing View Synthesis with Image and Depth Map Upsampling</b> <i>A. Dziembowski, A. Grzelka, D. Mieloch, O. Stankiewicz, M. Domański</i>
	<b>On accuracy of personalized 3D-printed MRI-based models of brain arteries</b> <i>M. Kociński, A. Materka, M. Elgalal, A. Majos</i>	<b>Effective Coverage as a New Metric for Image Quality Assessment Databases Comparison</b> <i>M. Buczkowski, R. Stasiński</i>
	<b>An Effective Consistency Correction and Blending Method for Camera-array-based Microscopy Imaging</b> <i>J. Bao, J. Fan, X. Hu, J. Wang, L. Wang</i>	<b>Analysing Acoustic Model Changes for Active Learning in Automatic Speech Recognition</b> <i>C. Wu, R. W. M. Ng, O. S. Torralba, T. Hain</i>
		<b>IVQAD 2017: An Immersive Video Quality Assessment Database</b> <i>H. Duan, G. Zhai, X. Yang, D. Li, W. Zhu</i>
15:30 - 15:50	Coffee break	
17:00 - 19:00	Guided tour	
19:00 - 23:00	Gala dinner	

## WEDNESDAY, 24 May 2017

8:30 - 13:00 Registration

9:30 - 10:30 **Plenary Lecture (C-7) – Chair: Ryszard Stasiński**  
**Elimination of impulsive disturbances from archive audio recordings**  
*Maciej Niedźwiecki*

10:30 - 11:00 Coffee break

11:00 - 12:40 Signal processing - 4 (C-12) – Chair: M. Domański

**Multi-wavelength analysis of substances levels in human blood**

*T. Kossowski, R. Stasiński*

**Method of vibroacoustic signal spectrum optimization in diagnostics of devices**

*M. Jarmołowicz, E. Kornatowski*

**Camera Motion Compensation from T-junctions in Distance Map Skeleton**

*C. Beumier, X. Neyt*

**SAR patch categorization using Dual tree oriented wavelet transform and Stacked Autoencoder**

*D. Gleich, P. Planinšič*

**Evaluation of Background Noise for Significance Level Identification**

*J. Pomenkova, E. Klejmová, T. Malach*

**3D Video Database with Known Parametres**

*L. Bolecek, J. Kufa, F. Kaučarík, V. Rícný*

Security and networks (C-13) – Chair: D. Karwowski

**Detecting Composite Image Manipulation based on Deep Neural Networks**

*H.-Y. Choi, H.-U. Jang, D. Kim, J. Son, S.-M. Mun, S. Choi, H.-K. Lee*

**FPGA implementation of IPsec protocol suite for multigigabit networks**

*M. Korona, K. Skowron, M. Trzepiński, M. Rawski*

**Low Profile Co-radiator Transmit-Receive Antenna for Ku-band**

*P. R. Sriram, S. Revathy, H. Umma Habiba*

**On Buffer Overflow Duration in WSN with a Vacation-Type Power Saving Mechanism**

*W. M. Kempa*

**'Window of visibility' inspired security lighting system**

*Y. Zhang, G. Zhai, J. Liu, X. Weng, Y. Chen*

**Ensemble of CNN and Rich Model for Steganalysis**

*K. Liu, J. Yang, X. Kang*

12:40 - 12:50 Closing IWSSIP 2017 (C-12) – Award announcement

12:50 - 14:00 Lunch break

## Social events

### Monday May 22nd

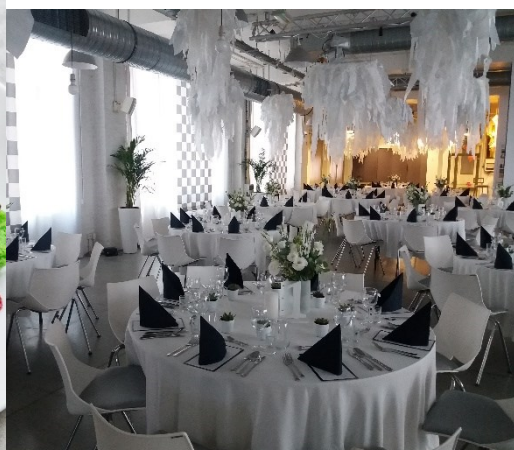
**Right after the last session ends**, all participants will be invited for a short walk along Warta river that would lead us to Poznan Cathedral. The walk is about 1,3 km and takes 15 -20 min. Those who are unable or unwilling to walk such a distance will be accompanied by the conference organizers to take a short tram ride.

There will be a guided tour in the Cathedral and around Ostrów Tumski - a small island that is considered a cradle of Polish nation. The tour will end in Tumaska restaurant (***Ostrów Tumski street no. 5A***), where the welcome party will take place. There will be a variety of Polish and international food offered. In order to make the social event even more interesting (though a small talk with your colleagues is interesting itself), we have invited the Polish folk band **Wiwaty**. The band plays Polish traditional music using old-fashioned instruments. We hope you will like this peek into Polish culture!



### Tuesday May 23rd

All participants are asked to come on their own to Poznań Old Town Square. **We will meet at 5 p.m. in front of the City Hall**. The guided tour that will take about 2 hours starts from there. The tour includes Poznań Old Town, as well as Kaiser's Castle, the monument of "Poznań 1956" and few historical buildings on the way. The tour will end in the very center of Poznań, in front of the renovated Old Printing House, dated back to the first half of the 19th century. The building hosts "Concordia Taste" restaurant where the gala dinner will take place. Those of you who do not feel like walking around Ponań city are asked to come directly to the building (***Concordia Design, Zwirzyńska street no. 3***) at 7 p.m.



At the dinner each IWSSIP attendee will have a chance not only to taste some modern food but also to chill out listening to jazz live music.

We have also prepared a surprise for our guests: once the dinner is served, you will be invited to take part in the interesting competition: **Polish nalewka tasting**. “Nalewka” is a type of alcoholic drink deeply rooted in Polish history. The drink doesn’t even have a direct translation into English – the closest being “a cordial”. It is similar to vodka, but it is not produced through alcohol distillation. Usually home-made, it is made from spirits that is poured over fruits, herbs, honey, flowers, nuts, roots or even porter beer! This abundance of recipes originates from Polish noble tradition, according to which each decent family produced their own nalewkas for medical purposes and passed proven recipes from generation to generation. It is this abundance of flavours and deeply-rooted tradition that we present during this event.

### *Taste and judge*

You’re are going to become a nalewka contest judge – a trained expert who scores the cordials on different counts: colour, smell, taste, alcohol content. Of course we won’t tell you the what the main ingredient is – you will have to use all of your senses to figure it out. Yet, there is a tasty and colourful prize waiting for the best judges with the most acute senses.



**Please remember to wear your conference badge – it is an entrance ticket to all social events, as well as coffee breaks and lunches.**

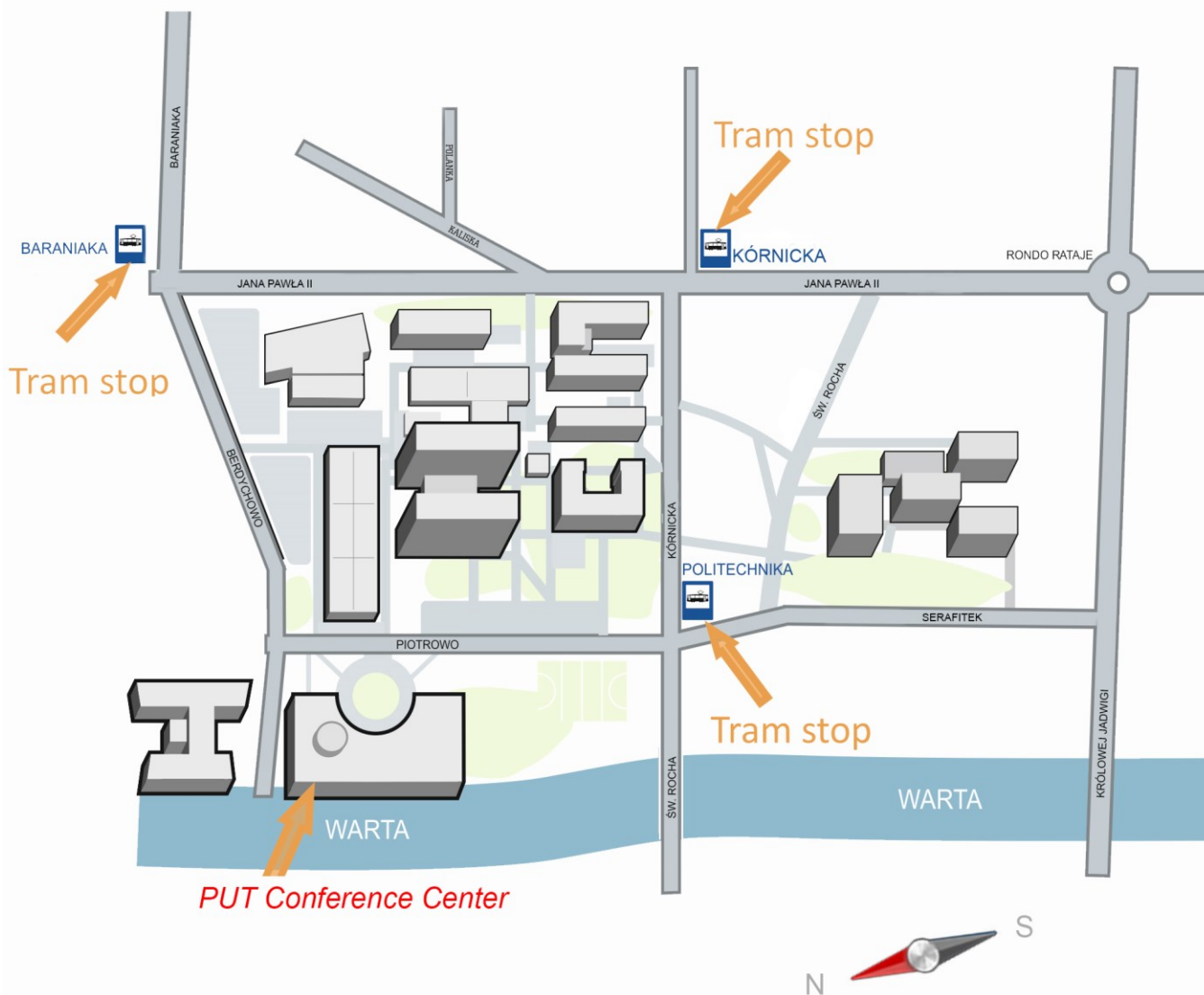
Speaking about the food: feel encouraged to try some traditional Polish food during the conference. Among other, familiar looking dishes (and their names), you will find *żurek* (a soup made of soured rye flour, akin to sourdough, and meat), *kluski* (dumplings of various kinds), *pierogi* (again dumplings, this time with filling) and *gotybkki* (cabbage leaves filled with meat or groats). The latter name translates into “pigeons”, though there is no pigeon meat in it. If any of your guidebooks explains where does this name come from, please let us know!

Enjoy the social events and do not forget to say “na zdrowie” (for health) when making a toast!

## Conference venue

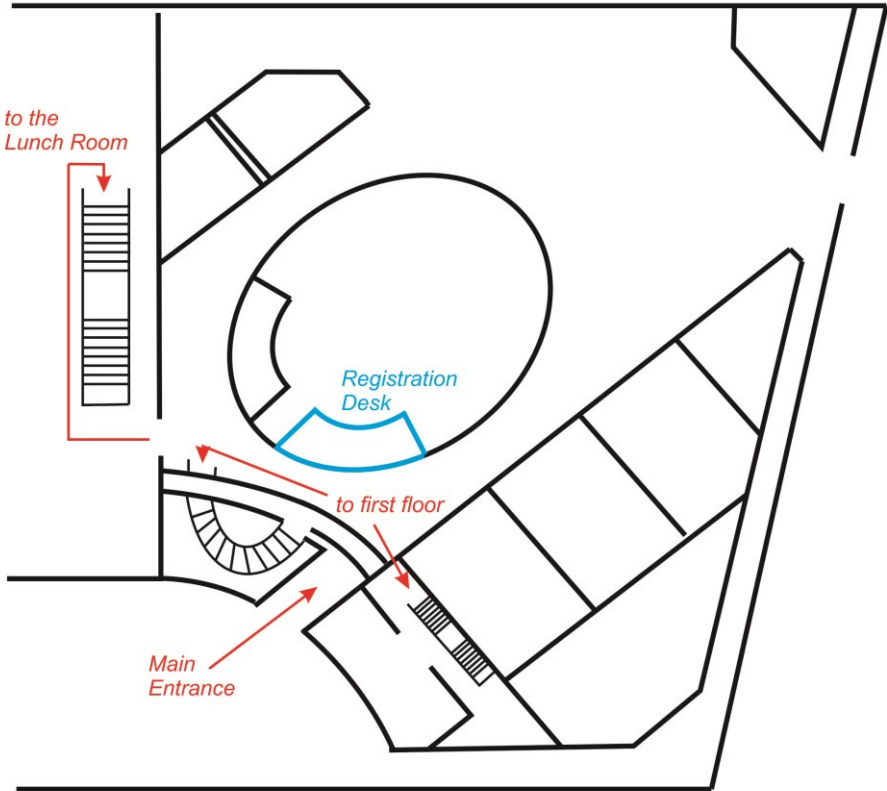
The IWSSIP 2017 Conference will take place in the Poznań University of Technology Lecturing & Conference Center located on WARTA Campus. (Centrum Wykładowo-Konferencyjne Politechniki Poznańskiej)

**Address:** 2 Piotrowo Street, 60-965 Poznań (52°24'14.0"N 16°56'58.2"E)



# Conference rooms

## Ground Floor



## First Floor

