

PRELIMINARY CONFERENCE PROGRAM

(Conference Venue: Hotel Osijek, Šamačka ulica 4, 31000, Osijek, Croatia)

Wednesday, 5 June 2019

9:00 – 10:00
Registration

10:00 – 10:50 (Room A – Lipa)
Opening Ceremony

General Chairs:
Professor Drago Žagar, PhD,
Professor Snježana Rimac-Drlje, PhD

Honorary Chair:
Professor Branka Zovko-Cihlar, PhD
“26 Years of the IWSSIP Conference”

11:00 – 12:00
Keynote Talk I

Aleksandra Pižurica
Multimodal Data Processing and Deep Learning in Digital Painting Analysis

12:00 – 13:30
Lunch break

13:30 – 15:10 (Room A – Lipa)

Session 1:
Signal Processing in Electronics

Blaž Pongrac and Dušan Gleich
Overview of Opto-Electrical Terahertz Spectroscopy

Danijel Šipoš, Marko Malajner and Dušan Gleich
Stepped Frequency and UWB Pulse Based Radars for Landmine Detection

Tomislav Radišić, Mario Muštra and Petar Andrašić
Design of an UAV Equipped with SDR Acting as a GSM Base Station

Julius Foit and Miroslav Husák
Stabilized-Load Crystal Oscillator

Sven Ubik, Karel Hynek and Jiří Melnikov
FPGA Packet Reflector for Network Path Testing

18.30 – 20.00
City Tour

20:00 – 22:00
Welcome Reception

13:30 – 15:10 (Room B – Kesten)

Session 2:
Image Processing I

Raimundo Vasconcelos and Helio Pedrini
Estimation of Fingerprint Image Quality Based On Neighborhood Strengthness Homogeneity

Jose Silva Neto, Waldson Leandro, Matheus Gadelha, Tiago Santos, Bruno Carvalho and Edgar Garduno
Automatic Fuzzy Segmentation of Textural Images Using Adaptive Divergence Affinity Functions

Marcos Roberto Souza, Diego Bertolini, Helio Pedrini and Yandre Costa
Offline Handwritten Script Recognition Based on Texture Descriptors

Lucas Helal, Diego Bertolini, Yandre Costa, George Cavalcanti, Alceu Britto Jr. and Luiz Oliveira
Representation Learning and Dissimilarity for Writer Identification

Israel Laurensi, Luciana Menon, Alceu Britto, Ma-noel Penna and Luiz Oliveira
Data Augmentation and Transfer Learning Applied to Charcoal Image Classification

15:10 – 15:30
Coffee Break

15:30 – 16:30 (Room A – Lipa)

Keynote Talk II
Andrea Tonello
Learning, Processing and Communication in Smart Energy Grids

16:30 – 17:50 (Room A – Lipa)

Session 3:
Image Processing for Autonomous Driving

Luis F. V. Silva, Danilo R. C. Bandeira and Bruno Carvalho
A Low-Budget Approach for Vehicle Detection and Occlusion Removal on Traffic Videos

Max Roecker, Yandre Costa, Alceu Britto Jr., Luiz Oliveira and Diego Bertolini
Vehicle Detection and Classification in Traffic Images Using ConvNets with Constrained Resources

Ivona Matoš, Zdravko Krpić and Krešimir Romić
The Speed Limit Road Signs Recognition Using Hough Transformation and Multi-Class SVM

Gustavo R. Valiati and David Menotti
Detecting Pedestrians with YOLOv3 and Semantic Segmentation Infusion

16:30 – 17:50 (Room B – Kesten)

Session 4:
Biomedical Signal Processing and Analysis I

Corin Ottesteanu
Ultrasound Elastography: Excitation Methods and Low-Cost Alternative

Lenin G. Falconi, María Pérez and Wilbert G. Aguilar
Transfer Learning in Breast Mammogram Abnormalities Classification with Mobilenet and Nasnet

Matej Kompanek, Martin Tamajka and Wanda Benesova
Volumetric Data Augmentation as an Effective Tool in MRI Classification Using 3D Convolutional Neural Network

Marija Habijan, Hrvoje Leventić, Irena Galić and Danilo Babin
Whole Heart Segmentation from CT images Using 3D U-Net Architecture

Thursday, 6 June 2019

8:30 – 9:00
Registration

9:00 – 10:40 (Room A – Lipa)

Session 5:
Networks and Wireless Communications

Samira Homayouni, Stefan Schwarz and Markus Rupp
Impact of SIR Estimation on Feedback Reduction During Heavy Crowd Events in 4G/5G Networks

Marko Malajner, Dušan Gleich and Peter Planinšič
Indoor AoA Estimation Using Received Signal Strength Parameter and a Support Vector Machine

Namir Škaljo, Alen Begović, Nermin Goran and Emir Turajlić
On Possibilities for Improvements of xDSL Troubleshooting Testing

Irena Petrijevčanin Vuksanović
Modeling an Interdependent Concept of Cyber Security in Croatian Digital Society

Bojan Gergič and Dušan Gleich
CORELA: Collaborative Learning Platform with Integrated Remote Laboratory Environment in VET

9:00 – 10:40 (Room B – Kesten)

Session 6:
Biomedical Signal Processing and Analysis II

Qiaoliang Li, Zhigang Yu, Suwen Qi, Zhuoying He, Shiyu Li and Huimin Guan
A Recognition Method of Urine Cast Based On Deep Learning

Suwen Qi, Tao Nie, Qiaoliang Li, Zhuoying He, Depeng Xu and Qiwen Chen
A Sperm Cell Tracking Recognition and Classification Method

Abhishek Verma, Piyush Singh and John Sahaya Rani Alex
Modified Convolutional Neural Network Architecture Analysis for Facial Emotion Recognition

Adriel dos Santos Araújo, Juan Lucas Vieira, Eduardo Jandre, Aura Conci, Diego Passos, Vanessa Braganhalo and José Viterbo
A Framework for Monitoring Patients with Alzheimer’s and Other Dementias

Gustavo Zanoni Felipe, Rafael Lima Aguiar, Yandre Maldonado E Gomes da Costa, Carlos Nascimento Silla Júnior, Sheryl Brahmam, Loris Nanni and Shannon McMurtry
Identification of Infants’ Cry Motivation Using Spectrograms

10:40 – 11:00

Coffee Break

11:00 – 12:00 (Room A – Lipa)

Keynote Talk III
Milan Bjelica
Deep Learning vs. Safety – Practical Approach and Platform Design Perspective

12:00 – 13:00
Lunch Break

13:00 – 14:00 (Room A – Lipa)
Industry Session

14:00 – 15:00 (Room A – Lipa)
Tutorial

Robert Cupec
Object Detection and Classification in 3D Point Clouds for Mobile Robot Manipulation

15:30 – 22:30
Excursion,
Conference Dinner

Friday, 7 June 2019

8:30 – 9:00
Registration

9:00 – 10:30 (Room A – Lipa)

Session 7:
Signal Processing

Corneliu Rusu
Results in One-Dimensional Discrete Phase Retrieval

Raissa Likhonina
QRD RLS Algorithm for Hand Gesture Recognition Applications

Panagiotis Tsinganos, Bruno Cornelis, Jan Cornelis, Bart Jansen and Athanasios Skodras
A Hilbert Curve Based Representation of sEMG Signals for Gesture Recognition

Bo Ram Cho, Suwoong Lee, Sukgyu Koh, Jun-Kyu Park and Chang-Hyun Kim
Fundamental Experiment on Relationship Between External Force and Light Intensity in Soft Tactile Sensor Using Sponge

Hagai Barmatz, Yizhar Lavner, Dana Klein, Yoni Vortman and Sivan Toldeo
A Method for Automatic Segmentation and Parameter Estimation of Bird Vocalizations

9:00 – 10:30 (Room B – Kesten)

Session 8:
Image Processing II

Deepak Anand, Goutham Ramakrishnan and Amit Sethi
Fast GPU-Enabled Color Normalization for Digital Pathology

Ali Alsam and Hans Jakob Rivertz
Colour to Grey by Maximum Signed Gradient

Filip Bajić, Josip Job and Krešimir Nenadić
Chart Classification Using Simplified VGG Mode

Vitor G. Marques, Luis R. D. da Silva, Bruno Carvalho, Leanderson R. F. de Lucena and Marcela M. Vieira
Deep Learning-Based Pore Segmentation of Thin Rock Sections for Aquifer Characterization Using Space Color Reduction

Darwin Ttito, Rodolfo Quispe, Adin Rivera and Helio Pedrini
Where Are the People? A Multi-Stream Convolutional Neural Network for Crowd Counting via Density Map from Complex Images

10:30 – 11:00
Coffee Break

11:00 – 11:45 (Room A – Lipa)

Keynote Talk IV
Gregor Rozinaj
Methodology and Technologies for Online Education

11:45 – 13:00 (Room A – Lipa)

Session 9:
Machine Learning

Delia Velasco-Montero, Jorge Fernández-Berni, Ricardo Carmona-Galán and Ángel Rodríguez-Vázquez
On the Correlation of CNN Performance and Hardware Metrics for Visual Inference on a Low-Cost CPU-Based Platform

Martin Tamajka, Wanda Benesova and Matej Kompanek
Transforming Convolutional Neural Network to an Interpretable Classifier

Dongxue Lu, Guiling Sun, Zhouzhou Li and Yangyang Li
Sparse Signal Reconstruction Algorithm Based On Residual Descent

Dražen Bajer, Bruno Zorić, Mario Dudjak and Goran Martinović
Performance Analysis of SMOTE-Based Oversampling Techniques When Dealing with Data Imbalance

11:45 – 13:00 (Room B – Kesten)

Session 10:
Image and Video Processing

Mateusz Buczkowski and Ryszard Stasiński
Convolutional Neural Network-Based Image Distortion Classification

Yasutaka Matsuo
Inter Prediction Using Super-Resolved or Blurred Local-Decoded Picture in Each CU

Jelena Vlaović, Mario Vranješ, Dominik Grabić and Dragan Samaržija
Comparison of Objective Video Quality Assessment Methods on Videos with Different Spatial Resolutions

Sarah Carneiro, Gabriel Silva, Guilherme Leite, Ricardo Moreno, Silvio Guimaraes and Helio Pedrini
Multi-Stream Deep Convolutional Network Using High-Level Features Applied to Fall Detection in Video Sequences

13:00 – 13:15 (Room A – Lipa)
Closing Ceremony

13:15 – 14:00
Coffee and Light Lunch