

CONFERENCE PROGRAMME

International Conference on Systems, Signals and Image Processing 2021

The 28th International Conference on Systems, Signals and Image Processing, IWSSIP 2021 will be held in Bratislava, the capital of the Slovak Republic, from **June 2 to June 4, 2021** and hosted by the Slovak University of Technology in Bratislava. The technical solution is provided by underline.

June 2 (WEDNESDAY)

10:00 – 10:30

Opening Ceremony
 (MAIN STAGE)

10:30 – 11:00

Keynote Talk: Touradj Ebrahimi
 (MAIN STAGE)

11:00 – 11:30

Keynote Talk: Gabriel Miro-Muntean
 (MAIN STAGE)

11:30 – 12:00

Keynote Talk: Abir Hussain
 (MAIN STAGE)

12:00 – 12:15

Keynote Discussions
 (GATHER.TOWN)

12:15 – 13:00

Lunch
 (GATHER.TOWN)

13:00 – 13:10

Sessions Opening
 (MAIN STAGE)

13:15 – 14:45

Sessions A, B (parallel)
 (ZOOM ROOMS)

14:45 – 15:45

Session Discussions A, B (parallel)
 (GATHER.TOWN)

15:45 – 15:55

Day 1 Round-up
 (GATHER.TOWN)

June 3 (THURSDAY)

9:30 – 10:00

Warm-up
 (MAIN STAGE)

10:00 – 10:10

Sessions Opening
 (MAIN STAGE)

10:15 – 12:00

Sessions C, D (parallel)
 (ZOOM ROOMS)

12:00 – 13:00

Session Discussions C, D (parallel)
 (ZOOM ROOMS)

13:00 – 14:00

Lunch
 (GATHER.TOWN)

14:00 – 14:10

Sessions Opening
 (MAIN STAGE)

14:10 – 16:00

Sessions E, F (parallel)
 (ZOOM ROOMS)

16:00 – 17:00

Session Discussions E, F (parallel)
 (GATHER.TOWN)

17:00 – 17:10

Day 2 Round-up
 (GATHER.TOWN)

June 4 (FRIDAY)

9:30 – 10:00

Warm-up
 (MAIN STAGE)

10:00 – 10:10

Sessions Opening
 (MAIN STAGE)

10:15 – 11:45

Sessions G, H (parallel)
 (ZOOM ROOMS)

11:45 – 12:45

Session Discussions G, H (parallel)
 (ZOOM ROOMS)

12:45 – 14:00

Lunch
 (GATHER.TOWN)

14:00 – 14:10

Opening Ceremony
 Redžúr Student Workshop
 (MAIN STAGE)

14:10 – 15:10

Redžúr Poster Session
 (GATHER.TOWN)

15:10 – 15:30

Closing Ceremony
 (MAIN STAGE)

Please see below the Session Allocations

Please note the times are represented in Central European Summer Time (UTC+2).

Partners

Session Allocations

June 2 (WEDNESDAY) 13:00 - 14:45

Session A: Signal Processing

Chairs: Galia Marinova and Radoslav Vargic

Supervised Mixture Analysis and Source Detection from Multimodal Measurements

Johan Lefeuvre, Saïd Moussaoui, Laurent Grosset and Anna-Luiza Mendes-Siqueira

Energy Reconstruction Techniques in TileCal under High Pile-up Conditions

Guilherme Gonçalves and Augusto Cerqueira

Adaptive IIR Filtering for System Identification applying the method by Nelder and Mead

Vassil Guliashki and Galia Marinova

Sudden Death Classification Using Electrocardiogram Signals and Structural Co-occurrence Matrix in Patients with Chagas Disease

Leandro Bezerra Marinho, Navar Medeiros Mendonça Nascimento, Carlos Henrique Leitão Cavalcante, Jardel Das Chagas Rodrigues, João Paulo do Vale Madeiro, Roberto Coury Pedrosa and Pedro Pedrosa Rebouças Filho

An Approach for BCI using Motor Imagery Based on Wavelet Transform, and Convolutional Neural Network

Lenka Rabčanová and Radoslav Vargic

Multi-method fusion for liquid flow velocity estimation in pipe

Pawel Biernacki

Session B: Machine Learning

Chairs: Sonja Grgić and Juraj Kačur

Deep learning-based detection of seedling development from indoor to outdoor

Hadhami Garbougé, Pejman Rasti and David Rousseau

Detection of optic disc and macula in retinal images using deep learning methods

Slavomir Kajan, Jarmila Pavlovičová, Jozef Goga, Veronika Kurilová, Kristián Lacko and Roman Krajňák

Classification of Toxic Ornamental Plants for Domestic Animals using CNN

Sara Satake, Rodrigo Calvo, Alceu Britto and Yandre Costa

Fingerprint Classification based on the Henry System via ResNet

João Wellington Mendes de Souza, Aldisio Gonçalves Medeiros, Gabriel Bandeira Holanda, Paulo Antonio Leal Rego and Pedro Pedrosa Rebouças Filho

Cluster Prediction Model based on Automatic Cluster Labeling and Fuzzy System

Sidney Araujo, Vinicius Machado, Lucia Silva and Rodrigo Veras

Automatic Cluster Labeling Based on Regression Error Analysis

Lucia Silva, Vinicius Machado, Sidney Araujo, Bruno Araújo and Rodrigo Veras

June 3 (THURSDAY) 10:00 - 12:00

Session C: Multimedia

Chairs: Panos Liatsis and Marek Vančo

Digital storytelling for learning with heritage artefacts

Sven Ubik and Jiří Kubišta

Document Filter for Writer Identification

Fabio Pignelli, Luiz S. Oliveira, Alceu S. Britto Jr., Yandre Costa and Diego Bertolini

Gait Recognition with DensePose Energy Images

Philipp Schwarz, Josef Scharinger and Philipp Hofer

Automatic recognition of Native advertisements for the Slovak language

Zuzana Bukovcikova, Vanesa Andicsova, Dominik Sopiak and Milos Oravec

Advanced Scene Sensing for Virtual Teleconference

Marek Vančo, Ivan Minárik and Gregor Rozinaj

Content-Based Multimodal Retrieval: Using Image and Audio Descriptors for Retrieving Cases from a Database of Cardiac Examinations

Vagner Mendonça Gonçalves and Fátima L. S. Nunes

Session D: Networks, Synchronisation, and Security

Chairs: Tomáš Zeman and Martin Medvecký

Using multi-index database layer in ad-hoc communication networks

Michal Kvet

Sensitivity Analysis for SDN Based Wi-Fi Handover Delay Model

Muhammad Emran, Vijeyanathan Thayanathan, Muhammad Umair and Ivan Kotuliak

Comparison of TCP Receiver-based Loss Differentiation Algorithms in Wired/Wireless Networks

Peter Truchly and Robert Repka

Computer forensics problem generator for competence assessment

Žad Deljković, Juraj Petrović and Predrag Pale

Security of using Border Gateway Protocol in Software-Defined Networking

Dalibor Dravecký and Martin Medvecký

Peak shaving in microgrids using battery storage

Juraj Londak, Radoslav Vargic and Pavol Podhradský

A Study on Cut-Off Elevation Angle Impact on GNSS Position Accuracy

Aleksander Biberaj, Alban Rakipi, Olimpjon Shurdi and Elson Agastra

June 3 (THURSDAY) 14:00 - 16:00

Session E: Image and Video Processing I

Chairs: Aura Conci and Jarmila Pavlovičová

Event-based Looming Objects Detection

Behnam Kamranian and Howard Cheng

Moment transform-based Compressive Sensing in Image Processing

Theofanis Kalampokas and George Papakostas

Fast Algorithm for Dyslexia Detection

Boris Nerušil, Jaroslav Polec and Juraj Skunda

Segmentation of significant regions in retinal images: perspective of U-Net network through a comparative approach

Matej Pirhala, Jozef Goga, Veronika Kurilova, Jarmila Pavlovicova and Slavomir Kajan

Banana Ripening Classification using Computer Vision: Preliminary Results

Matheus Araújo, Miguel Santos, Flávio Feliciano, Pedro Costa and Fabiana Leta

Static and Dynamic Point Cloud Compression by TSPLVQ

Amira Filali

Simultaneous localization and mapping in 3Dspace

Dominik Pruzinsky, Dominik Sopiak and Miloš Oravec

Session F: Image, Speech, and COVID-19

Chairs: Fabiana Leta and Jozef Juhár

Chest X-ray image enhancement: a COVID-19 identification case study

Luiz Felliipe Machi Pereira, Arthur R. Batista, Diego Bertolini, Rodolfo M. Pereira, Lucas O. Teixeira and Yandre M. G. Costa

Transition from hybrid to end-to-end speech recognition in Slovak utilizing Transformer neural network architecture

Anton Buday, Anton Čižmár and Jozef Juhár

CNN based speech commands recognition

Mate Haban and Juraj Kacur

New AIoT-Based Approach for Automatic Detection of COVID-19 Using Deep Learning Techniques in CT Images

Raylson Silva de Lima, Virginia Xavier Nunes, Adriell Gomes Marques, Luís Fabrício de Freitas Souza, Paulo Dias da Rocha Neto, Angelo Roncalli Alencar Brayner, Victor Hugo Costa de Albuquerque and Pedro Pedrosa Rebouças Filho

New Approach Detection of COVID-19 by Cough Spectrogram Using IoT and Learning Transfer Technique for Classification

Francisco Hércules Silva, Adriell Gomes Marques, Luís Fabrício Freitas Souza, Virgínia Xavier Nunes, José Jerovane Nascimento, Paulo Dias Neto and Pedro Pedrosa Rebouças Filho

An Optimized Approach to COVID-19 Detection via Cough Audio Signals and Dimensionality Reduction

Jefferson Almeida, Gabriel Bezerra, Luís Souza and Pedro Rebouças Filho

June 4 (FRIDAY) 10:00 - 11:45

Session G: Image and Video Processing II

Chairs: Snježana Rimac-Drlje and Martin Rakús

Viewpoint selection for fibrous structures in a pre-operative context: application to cranial nerves surrounding skull base tumors

Méghane Decroocq, Morgane Des Ligneris, Timothée Jacquesson and Carole Frindel

Presenting a system to aid on the scintigraphy bone metastasis analysis using DICOM files

José Morista Carneiro da Silva, Fernando Fernandes, Heron Botelho, Aura Conci and Cláudio Tinoco Mesquita

Segmentation and Quantification of Bi-Ventricles and Myocardium Using 3D SERes-U-Net

Marija Habijan, Irena Galić, Hrvoje Leventić, Krešimir Romić and Danilo Babin

Left Atrial Appendage Segmentation and Analysis in 3D and 4D medical images

Hrvoje Leventić, Marin Benčević, Danilo Babin, Marija Habijan and Irena Galić

Analysis of the DFT-based Watermarking Method for Image Steganography

Petar Branislav Jelušić, Ante Poljičak, Davor Donevski and Tomislav Cigula

Clustering Thermography Data to Follow up Breast Cancer Treatment

Adriel S. Araujo, Milena H. S. Issa, Ángel Sánchez, Débora C. Muchaluat-Saade and Aura Conci

Session H: Interaction & Education

Chairs: Jaromír Hrad and Peter Trúchly

Secure Web Accessibility Protocol for Challenged Users

Abhinav Roy, Pranav Joglekar and Abhijit A. M.

Robust Fingerprint Singular Point Detection using a Single-Stage CNN for Object Detection

Lucas S. Fernandes, João P. B. Andrade, Leonardo F. da Costa, Paulo A. L. Rego and José G. R. Maia

A New Approach for Facial Recognition based on Three-dimensional Point Cloud and Kinect Sensor using Machine Learning

Jefferson Silva Almeida, Pedro Henrique Feijó de Sousa, Fabrício G. Nogueira, Bismark C. Torrico and Pedro Pedrosa Rebouças Filho

Massive Interactive Distance Learning Environments

Tomas Zeman and Jaromír Hrad

A Remote-Access Software-Defined Radio Virtualized Wireless Communications Laboratory

Martin Rakús and Ladislav Divinec

Multi-tool environment with an online assistant for teaching Direct Digital Synthesis

Marsida Ibro and Galia Marinova