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Editor
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Preface

The volume contains the proceedings of the international conference on Digital Image & Signal Processing (DISP’19). The international conference on Digital Image & Signal Processing represents an ideal opportunity for the students and the researchers from both industrial and academic domains having as main objective to present their latest ideas and research results in any one of the DISP’19 topics. The International Conference on Digital Image & Signal Processing (DISP’19) aims to investigate innovative applications and last researches in the areas of applied signal processing and digital image.

The DISP’19 conference is a scientific event which gathered leading researchers and practitioners who presented their ideas to more than 100 attendees. Attendees have provided high quality contributions reviewed by a program committee featuring renowned international experts on a broad range of knowledge management topics. More than 261 papers were submitted to the DISP’19 conference from authors of many countries and continents. Two or three reviewers were assigned to each paper and according to these reviews, 130 papers were accepted which makes acceptance rate of 48%.

We are grateful to the St Hugh's College, Oxford University, United kingdom, for hosting this conference. Also, we would like to express our gratitude to the Chairs, Program Committee, External Reviewers, Organizing Committee and the keynote speakers for their wonderful work and efforts. Finally, we would like to thank all the participants and sponsors hoping to meet them soon for other collaboration in scientific events.

Sincerely yours,

Faouzi Hidoussi

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Norsila Shamsuddin, Dr Farahwahida Mohd and Hasnu Rizal Zakaria. (France)

Key Talk 018 (ID: 052) Image Processing under Variable Lighting: LIP Model and Asplund’s metrics.  
Michel Jourlin. (France)

Key Talk 019 (ID: 076) Multimodal Deep Learning EEG-EMG Data Fusion for Gesture Classification to Control a Prosthetic Hand.  
Diego Faria. (United Kingdom)

Key Talk 020 (ID: 085) Data-driven Neural Architecture Learning for Financial Time-series Forecasting.  
Dat Thanh Tran, Juho Kanniainen, Moncef Gabbouj and Alexandros Iosifidis. (Finland)

Key Talk 021 (ID: 094) PAVO: a Parallax based Bi-Monocular VO Approach For Autonomous Navigation In Various Environments.  
Damien Vivet, Adrien Debord and Gaël Pagès. (France)

Key Talk 022 (ID: 121) Anticipation of epileptic seizures using distributed EEG signal processing.  
Nejra Beganovic, Samed Jukic and Jasmin Kevric. (Bosnia and Herzegovina)

Key Talk 023 (ID: 143) Incremental learning based online SVMs for LiDAR sensory data analysis.
Key Talk 024 (ID: 147) **On The Computing Of Definite Integrals By Using Of The Computing Of Indefinite Integrals.**
*Mehriban Imanova, Mehdiyeva Galina and Vагif Ibrahimov. (Azerbaijan)*

Key Talk 025 (ID: 174) **Diagnosis and human behavior modeling in railway network using operating data.**
*Vincent Dimanche, Alban Goupil, Alexandre Philippot, Bernard Riera and Gérard Gabriel. (France)*

Key Talk 026 (ID: 178) **If you aim at intelligent image processing, Beware of the pitfalls awaiting for you.**
*Emanuel Diamant*

Key Talk 027 (ID: 227) **Disparity-based HDR imaging.**
*Jennifer Bonnard, Gilles Valette and Céline Loscos. (France)*

Key Talk 028 (ID: 229) **The Introduction of Smart Grid concept in Russia (on the example of the Smart City “New Moscow”).**
*Vitaliy Bushuev, Dmitry Solovyov, Aleksey Adamtsevich and Liubov Shilova. (Russia)*

Key Talk 030 (ID: 233) **Secure communication system based on compressive sensing.**
*Lixiang Li, Lin Wang, Haipeng Peng and Guoqian Wen. (China)*

Key Talk 031 (ID: 045) **The Effects of Changing Water Content on Tissue Segmentation.**
*Ravi Bansal, Xuejun Hao and Bradley Peterson. (United States)*
Article 001 (ID: 018) A modification of Bressloff-Cowan spherical model of hypercolumn, conformal geometry and stability problem. Dmitri Alekseevsky. (Russia)


Article 003 (ID: 041) New trends in digital image. Emanuel Guariglia. (Italy)


Article 005 (ID: 053) Design of Intelligent Detection and Tracking System In Anti-UAV Optoelectronic Module. Rui Wang and Huajun Song. (China)

Article 006 (ID: 055) Semi-supervised GAN for Multispectral Image Classification. Hamideh Kerdegari, Manzoor Razaak, Vasileios Argyriou, Paolo Remagnino and Anish Khadka. (United Kingdom)

Article 007 (ID: 056) A 5.25ps-resolution TDC on FPGA using DSP blocks. Scott Tancock and Naim Dahnoun. (United Kingdom)

Article 008 (ID: 057) Comparison Between Uniform and Nonuniform Interpolation Techniques for Digital Alias-free FIR Filtering. Hikmat Darawsheh and Andrzej Tarczynski. (United Kingdom)


Article 010 (ID: 069) New results on the performance of MIMO-STBC systems subject to correlated Weibull fading channels. Abdelmajid Bessate and Faissal El Bouanani. (Morocco)

Article 011 (ID: 070) Push-pull Feedback Implements Rough-to-fine Information Processing. Xiao Liu and Si Wu. (China)

Article 012 (ID: 072) Data hiding in video H.264 by motion vectors. Masoud Dashtdar, Ahmad Keshavarz and Milad Esa Nezhad Bushehri. (Iran)

Article 013 (ID: 075) Mental Emotional Sentiment Classification with an EEG-based Brain-Machine Interface. Jordan J. Bird, Aniko Ekart, Christopher D. Buckingham and Diego R. Faria. (United Kingdom)

Article 014 (ID: 079) Genetic Sample Consensus for Reliable and Efficient Model Estimation. Jianguo Wang and Hengyuan Tian. (Australia)
Article 015 (ID: 080) 
Cognitive Radio Modulation and Coding Schemes using Convolutional Neural Networks.
Phui San Cheong. (China)

Article 016 (ID: 082) 
Access cards app.
Nouf Alabdulqader. (Saudi Arabia)

Article 017 (ID: 084) 
From Crowdsourcing to Participatory sensing: Image-based Ground Visibility for Aviation (Pilot Study).
Daniela Kratchounova and David Newton. (United States)

Article 018 (ID: 085) 
Data-driven Neural Architecture Learning for Financial Time-series Forecasting.
Dat Thanh Tran, Juho Kanniainen, Moncef Gabbouj and Alexandros Iosifidis. (Finland)

Article 019 (ID: 086) 
Wavelet based Fusing LBP and DCT for Ethnicity Identification from Facial Images.
Alan Abdulla and Hawkar Ahmed. (Iraq)

Article 020 (ID: 087) 
Performance Comparison of Accelerated MVDR Beamformers for Medical Ultrasound Imaging.
Jayaraj Kidav, Liya K, Deepthy G S and N M Sivamangai. (India)

Article 021 (ID: 088) 
Design and Application of Optimal Wavelet Coefficients in Speech Signals.
Zhang Lanyong and Zhu Shuai. (China)

Article 022 (ID: 089) 
Real Time Scalable Multi-Channel Coincidence Counting System Using Time-to-Digital Converters.
Ekin Arabul, John Rarity and Naim Dahnoun. (United Kingdom)

Article 023 (ID: 091) 
Carl-Magnus Svensson, Oksana Shvydkiv, Stefanie Dietrich, Lisa Mahler, Mahipal Choudhary, Thomas Weber, Miguel Tovar, Martin Roth and Marc Thilo Figge. (Germany)

Article 024 (ID: 093) 
3D Object Detection Based on Spherical Projection.
Di Liu, Jonathan Li, Zhipeng Luo and Zhenlong Xiao. (China)

Article 025 (ID: 094) 
PAVO: a Parallax based Bi-Monocular VO Approach For Autonomous Navigation In Various Environments.
Damien Vivet, Adrien Debord and Gaël Pagès. (France)

Article 026 (ID: 095) 
RSSNet: Recurrent Sequential-Slice Network for deep feature learning and its application on 3D MLS point clouds recognition.
Zhipeng Luo, Jonathan Li, Di Liu and Zhenlong Xiao. (China)

Article 027 (ID: 097) 
DDoS Detection Using Statistical Modelling.
Derya Erhan and Emin Anarım. (Turkey)

Article 028 (ID: 099) 
Automatic Beta Angle Measurements in Ultrasonic DDH.
Areen Al.Bashir, Hala Amary, Fadi Rousan and Rami Jahmani. (Jordan)
Article 029 (ID: 100) Feature selection of neural networks is skewed towards the less abstract cue.
Marcell Wolnitza and Babette Dellen. (Germany)

Ali Daher and Ali Haidar. (Lebanon)

Article 031 (ID: 103) Generation of Sample Complex Wishart Distributed Matrices and Change Detection in Polarimetric SAR Data.
Allan Nielsen, Henning Skriver and Knut Conradsen. (Denmark)

Çağatay Ateş, Süleyman Özdel and Emin Anarım. (Turkey)

Dmitri Alekseevsky. (Russia)

Dhiman Chowdhury Chowdhury and Md. Mehti Hasan. (United States)

Article 035 (ID: 112) Analysis by the Empirical Mode Decomposition of the Lightning Current Derivative and the radiated electric and magnetic fields waveforms which are simultaneously recorded by the CN Tower lightning measurement system.
Ouarda Nedjah and Ali M. Hussein. (Canada)

Mete Ramazan and Hasan Amca. (Cyprus)

Article 037 (ID: 115) A Deep Learning Algorithms Enabled Scheme for Colourimetric Test.
Marzia Tania, Khin T. Lwin, Antesar M. Shabut and M.A. Hossain. (United Kingdom)

Himanshu Kumar, Sumana Gupta and Venkatesh K. Subramanian. (India)

Article 039 (ID: 119) Classification of Meningioma MRI Images Using First-Order Statistical Feature and Markov Random Field Modeling.
Flaviana and Risti Suryantari. (Indonesia)

Article 040 (ID: 120) An Integrated Method for Myocardial Ischemia Segmentation using MRI.
Merjulah Roby and Chandra Jayaraman. (India)

Article 041 (ID: 124) Immersion and participation: technological, aesthetic and social opportunities to overcome inequality through virtual reality.
Ulyana Aristova, Alexey Rolich and Alexanra Staruseva-Persheeva. (Russia)

Article 042 (ID: 126) Deep Reinforcement Learning with VizDoom First-Person Shooter.
Dmitry Akimov and Ilya Makarov. (Russia)

Article 043 (ID: 127) A review of machine learning techniques for applied eye fundus and tongue digital image processing with diabetes management system.
Article 044 (ID: 130) Intelligent Aedes Mosquito Control and Monitoring System (i-MHS): Internet of Things (IoT) Approach.
Mustafa Man, Wan Aezwani Wan Abu Bakar, Wan Nural Jawahir Hj Wan Yussof and Lim Chee Hwa. (Malaysia)

Mustafa Man, Wan Aezwani Wan Abu Bakar, Wan Nural Jawahir Hj Wan Yussof, Mustafa Afanddi Mat Nor and Chee Hwa Lim. (Malaysia)

Shogo Matsuno, Minoru Ohyama, Hironobu Sato and Kiyohiko Abe. (Japan)

Article 047 (ID: 136) Chaotic signals and bifurcations in the dynamical system of magnetized gyrostat-satellites.
Anton Doroshin. (Russia)

Article 048 (ID: 140) A Machine Learning-Based Secure Face Verification Scheme and Its Applications to Digital Surveillance.
Huan-Chih Wang and Ja-Ling Wu. (Taiwan)

Jiyoung Kang. (South Korea)

Article 050 (ID: 142) Python analyzing delayed payments in time-dependent deteriorating items.
V R Lakshmi Gorty. (India)

Article 051 (ID: 145) A Secured Image Communication with Dual Encryption and Reversible Watermarking.
Sri Surya Teja Boppana and Long Ma. (United States)

Article 052 (ID: 146) Participatory digitization services for library resources within knowledge city environments.
Zois Koukopoulos and Dimitrios Koukopoulos. (Greece)

Article 053 (ID: 150) A study on additional information analysis method of voices used in FinTech.
Hyungwoo Park and Wonhee Lee. (South Korea)

Article 054 (ID: 152) 4K Vector-Based Image Placeholders for the Web.
Robin Marx, Peter Quax and Wim Lamotte. (Belgium)

Rustam Latypov and Evgeni Stolov. (Russia)

Article 056 (ID: 157) 3D Robot Pose Estimation from 2D Images.
Christoph Heindl, Sebastian Zambal, Andreas Pichler, Josef Scharinger and Thomas Pönitz. (Austria)
Article 057 (ID: 158) Graph-variante signal analysis for detecting spatio-temporal correlates of the enhanced signal in normal-appearing white matter one month after a mild stroke. 
Keith Smith, Maria Valdes-Hernandez, Stephen Makin, Paul Armitage, Catherine Sudlow, Javier Escudero and Joanna Wardlaw. (United Kingdom)

Article 058 (ID: 160) Digital image correlation and optical flow analysis based on the material texture with application on high-speed deformation measurement in shear cutting. 
Christoph Hartmann and Wolfram Volk. (Germany)

Article 059 (ID: 162) Study of Water Resistance of Nanochitosan-CNC Composite Film. 
Mekro Permana Pinem, Erwann Guénin, Khashayar Saleh, Elisabeth Van Hecke, Danièle Clausse, Endarto Yudo Wardhono, Hadi Wahyudi, Sri Agustina and Frederic Nadaud. (France)

Article 060 (ID: 163) A method based on texture feature and edge detection for people counting in a crowded area. 
Songchenchen Gong and El-Bay Bourennane. (France)

Article 061 (ID: 165) Data Processing In Complicated Noise Environment. 
Serhii Vovk. (Ukraine)

Article 062 (ID: 166) A new method for processing nuclear magnetic resonance signals during express control of the state of a condensed medium. 
Nikita Myazin, Vadim Davydov, Angelina Moroz, Roman Davydov, Valentin Dudkin, Vasily Rud’ and Anton Pronin. (Russia)

Carol Smidts, Marat Khafizov and Yunfei Zhao. (United States)

Article 064 (ID: 168) Validating the Influence Model for Influence Maximization-Revenue Optimization. 
Trisha Lawrence and Patrick Hosein. (Trinidad and Tobago)

Article 065 (ID: 171) Road slippery detection based on CCTV cameras using convolutional neural network. 
Dariusz Grabowski and Andrzej Czyzewski. (Poland)

Article 066 (ID: 176) Peirce’s Existential Graphs and the property of distinguishing between diagrammatic and symbolic representation. 
Takashi Sasaki. (Japan)

Article 067 (ID: 177) Fusion of Adaptive Thresholding Rules and Bit Allocations during Wavelet-based Subband Noisy Image Compression. 
Yury Bekhtin. (Russia)

Article 068 (ID: 181) Development of the virtual game “Maze” in Unity 3d for Android. 
Muhit Azybaev, Nurassyl Kerimbayev, Aliya Akramova and Almira Abdykarimova. (Kazakhstan)

Article 069 (ID: 184) Improving the Accuracy of Intelligent Pose Estimation Systems Through Low Level Image Processing Operations. 
Jannik Christian Lærkegård Pedersen, Mattias Foltmar Sander, Niklas Fruerlund Jensen, Jonas Lasham Lakhrissi, Mikkel Gede Hansen, Patrick Staalbo and Andreas Wulff-Abramsson. (Denmark)
Article 070 (ID: 191) Inventing wheels: why improvements to established cluster algorithms fails to catch the wheel.
  Ole Kristian Ekseth, Magnus Gribbestad and Svein-Olav Hvasshovd. (Norway)

Article 071 (ID: 193) Joint design approach for stereoscopic measurement systems.
  Alexey Gorevoy, Alexander Machikhin, Vladislav Batshev and Vasily Koluchkin. (Russia)

Article 072 (ID: 196) A Forensic Method Combining Steganalysis and Tamper Detection.
  Zhe Liu, Ling Gao, Wenbo Wan, Jun Wang and Jiande Sun. (China)

Article 073 (ID: 197) A new method of processing the pulse wave image in the rapid diagnosis of the human health condition.
  Roman Davydov, Valery Antonov, Anna Grevtseva, Vadim Davydov, Michael Vysochzy, Alexey Cheremisin, Valentin Dudkin, Vasily Rud’ and Viktor Krasnoshchekov. (Russia)

  Ahmed Agiel and Najeeba Kutty. (UAE)

  Hiromu Ishio and Masaru Miyao. (Japan)

Article 076 (ID: 201) Superresolution algorithms in applicative noise conditions using superpixel segmentation.
  Sergey Savvin, Alexander Sirota and Alexander Ivankov. (Russia)

Article 077 (ID: 206) Analysis of Resource allocation for Multiple UAV-aided Clustered Jointly Processed Cellular MAC.
  Muhammad Imran Majid. (Canada)

Article 078 (ID: 207) The formation of image of light-shadow boundary with a light degree of contrast in the refractometer.
  Nadezda Grebenikova and Vadim Davydov. (Russia)

Article 079 (ID: 209) Detection of Shocking Images As One-Class Classification Using Convolutional And Siamese Neural Networks.
  Pavel Gulyaev and Andrey Filchenkov. (Russia)

Article 080 (ID: 210) Features of the formation of the optical image of the magnetic field lines in the interpolar space.
  Semen Logunov, Vadim Davydov, Artem Koshkin, Alexey Cheremisin, Valentin Dudkin, Vasily Rud’, V Krasnoshchekov and Artem Markaryan. (Russia)

Article 081 (ID: 211) Digital Rock Image Clustering Based On Their Feature Extracted Via Convolutional Autoencoders.
  Yunfeng Bai and Vladimir Berezovsky. (Russia)

Article 082 (ID: 214) Handwriting Recognition with Improved Gated Recurrent Neural Networks.
  Arseniy Nerinovsky and Andrey Filchenkov. (Russia)
Article 083 (ID: 216) Contour Codewords Temporal Consistency Based Small Moving Infrared Target Detection.
Fan Zhao, Sidi Shao, Tingting Wang, Erhu Zhang and Guangfeng Lin. (China)

Article 084 (ID: 217) Recent Developments in Data Science: Comparing Linear, Ridge and Lasso Regressions Techniques Using Wine Data.
Mayooran Thevaraja, Azizur Rahman and Mathew Gabirial. (Australia)

Article 085 (ID: 218) Recognition of gestures with the help of images.
Nurbol Beisov, Nurassyl Kerimbayev and Alma Turganbayeva. (Kazakhstan)

Article 086 (ID: 219) Multimodal biometrics: multilevel fusion of ear and face.
Himanshu Purohit and Pawan K Ajmera. (India)

Article 087 (ID: 223) A Concept of Automatic Film Color Grading Based on Music Recognition and Evoked Emotions.
Dawid Weber and Bozena Kostek. (Poland)

Article 088 (ID: 225) Assessment of consciousness level employing pictorial gaze estimation and EEG signal analysis.
Adam Kurowski and Andrzej Czyzewski. (Poland)

Article 089 (ID: 226) Automatic Transcription of Speech to International Phonetic Alphabet Employing Acoustical and Facial Motion Capture Data.
Szymon Zaporowski, Bozena Kostek and Andrzej Czyzewski. (Poland)

Hassan Mustafa and Satish Gajawada. (Egypt)

Article 091 (ID: 233) Secure communication system based on compressive sensing.
Lixiang Li, Lin Wang, Haipeng Peng and Guoqian Wen. (China)

Article 092 (ID: 256) Effects of architecture on the electrical characteristics of transistors fabricated according to BICMOS technology.
Asma Benchiheb and Farida Hobar. (Algeria)

Article 094 (ID: P03) Control of alternative energy to achieve sustainable development.
Khawla Hussein Hamdan and Hanan Abdulameer Kadhim Al-musawi. (Iraq)

Article 095 (ID: P07) Automatic and Adaptive Signal- and Background-ROIs with Analytic-Representation-based Processing for Robust Heart-rate Estimation by a Webcam.
James John, Syam Krishna and Ramesh R. Galigekere. (India)

Shunpeng Zou, Xiaohui Zou, Xiaoqun Wang, Qiang Yang, Jian Li and Lijun Ke. (China)