



The Fourth IEEE International Image Processing, Applications and Systems Conference'20

9-11 December 2020, Genova, Italy

Organized by:

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Tunisia

Genoa University, Italy

INRIA, Sophia Antipolis, France

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Genoa University, Italy

The conference is scheduled online

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Preface

IPAS 2020 will take place in Genova, Italy during December 9-11, 2020. Due to covid-pandemic problems that may be encountered, the safety of our authors is our priority, the conference is managed on-line. Image Processing Application in modern Systems makes them smart, interactive integrating features going sometimes beyond human intelligence. The international Image Processing Applications and Systems conference aims at grouping from all over the world challenging researchers, innovators, academicians, and practitioners in image processing theory and tools, for exchanging their research achievements and discussing their main issues. The conference will also offer an opportunity to make image processing researchers and industrial parts collaborate together for innovation.

The conference is devoted to image processing, computer vision algorithms and applications. It includes high quality original papers in all areas of computer vision applications.

The fourth IEEE International Conference of Image Processing Applications and Systems has seven sessions composed of 35 regular papers from 22 countries (Algeria, Bangladesh, Canada, Cyprus, Japan, Kazakhstan, Korea, France, Indonesia, Italy, Lybia, Morocco, Philippine, Portugal, Russia, South Africa, Spain, Sri Lanka, Tunisia, Turkey, United Kingdom, United States of America). The review process has been double blinded. At least three reviewers have been assigned per paper. An acceptance rate of 57 % is finally obtained. On behalf the program committee of IPAS'20, we are grateful to all the authors for their fine contributions and for the high quality of their papers.

The fourth IEEE International Conference of Image Processing Applications and Systems has seven invited keynote speakers on different topics of image processing applications. On behalf the organizing committee of IPAS'20, we would like to thank all the speakers for their support and their valuable contributions.

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Dorra Sellami

François Bremond

Fabio Solari

0.1 Advanced Program

Welcome to IPAS'20



0.1.1 Wednesday December 9, 2020

Wednesday, 9h00–9h30
Opening session

Wednesday, 9h30–10h20
Keynote I by Prof. Giovanni Maria Farinella
Title: Future Predictions in Egocentric Vision
Chairs: Prof. Fabio Solari (Italy) & Prof. Nicolas Dobigeon (France)



Wednesday, 10h30–12h10
Regular Session S1 : Image understanding and activity recognition
Chairs: Prof. Srijan Das (France) and Prof. Ali Douik (Tunisia)

Hamza Alaoui, Mohamed Tarik Moutacalli , Mehdi Adda , AI-Enabled High-Level Layer for Posture Recognition Using The Azure Kinect in Unity3D (Canada)

Pedro Miguel Augusto, Jaime S. Cardoso, Joaquim Fonseca, Automotive Interior Sensing – Towards a Synergetic Approach between Anomaly Detection and Action Recognition Strategies (Portugal)

Joao Ribeiro Pinto, Tiago FS Gonçalves, Carolina Pinto, Luís Sanhudo, Audiovisual Classification of Group Emotion Valence Using Activity Recognition Networks (Portugal)

Shane J Reid, Sonya Coleman, Towards real time activity recognition (United Kingdom)

Muhammad Fahim, Denis Rangulov, Emotion Recognition on large video dataset based on Convolutional Feature Extractor and Recurrent Neural Network (Russia)

Wednesday, 14h00–14h50
Keynote II by Prof. Dimitri Ognibene (Italy & United Kingdom)



Title: Adaptive Vision for Human Robot Collaboration
Chairs: Prof. Hassan Rabah (France) & Prof. Mondher Frikha (Tunisia)

Wednesday, 15h00–17h00

Regular Session S2: Low level image processing and Image Retrieval
Chairs: Prof. Riadh Abdelfattah (Tunisia) and Prof. François Bremond (France)

Aicha Baya Goumeidane, Nafaa Nacereddine, Statistical and spatial information association for clusters number and mean values estimation in image segmentation (Algeria)

Kazutoshi Akita, Muhammad Hari, Norimichi Ukita, Scale Proposals for Region-dependent Super-Resolution for Object Detection (Japan & Andonesia)

Brandon Rebholz, Mohamed Almekkawy, Analysis of Speckle Tracking Methods: Correlation and RF Interpolation .. (United States of America)

Sanae Boutarfass, Bernard Besserer, Improving CNN-based colorization of BW photographs (France)

Zhanibek Darimbekov, Aslan Ubingazhibov, Zarina Serikbulatova, Fatih M Demirci, News2Image: Automated System of Image Recommendation to News Articles (Kazakhstan)

Rémi Decelle, Ehsaneddin Jalilian, Neural Networks for Cross-Section Segmentation in Raw Images of Log Ends (France and Austria)

0.1.2 Thursday, 10 December, 2020

Thursday, 9h00–9h50

Keynote III by Prof. François Bremond (France)
Title: Video Analytics for People Monitoring
Chairs: Zied Lachiri (Tunisia) and Dorra Sellami (Tunisia)



Thursday, 10h00–11h20

Regular Session S3: Virtual Reality and System Vision
Chair: Prof. Sébastien Ambellouis (France) and Prof. Mounir Sayadi (Tunisia)

Santi A Orlando; Antonino Furnari; Giovanni Maria Farinella ,
Virtual to Real Unsupervised Domain Adaptation for Image-Based
Localization in Cultural Sites (Italy)

Razeen Hussain; Manuela Chessa; Fabio Solari , Modelling Foveated
Depth-of-field Blur for Improving Depth Perception in Virtual
Reality (Italy)

Christos Kyrkou , Imitation-Based Active Camera Control with Deep
Convolutional Neural Network (Cyprus)

Radouan Dahbi; Vincent Bombardier; David Brie; Eric Masson, Rigid
Registration of Monomodal and Multimodal Images for Wood Pieces
Analysis (France)



Thursday, 11h30–12h50

Regular session S4: Video compression and Processing

Chair: Prof. Andrea Trucco (Italy) and Prof. Mohamed Atri (Tunisia)

Jesse K Redford; Xingjie Li, A Feature Oriented Framework and
Enhanced Assessments for Imaging Compression... (United States of America)

Dae yeol Lee; Hyunsuk; Jongho Kim ; Alan Bovik , Video Quality
Model for Space-Time Resolution Adaptation
..... (United States of America and Korea)

Matteo Terreran; Andrea Tramontano; Jacobus C. Lock; Stefano
Ghidoni, Real-time Object Detection using Deep Learning for
helping People with Visual Impairments (Italy and United Kingdom)

Naima Zouidi; Amina Kessentini; Fatma Belghith; Nouri Masmoudi,
Statistical analysis of the QIMT structure: intra mode decision .. (Tunisia)

Yashwant Kumar Temburu; Simranjeet Singh; Vaibhav Malviya;
Sachin Patkar, Real time System Implementation for Stereo
3D Mapping and Visual Odometry (India)



Thursday, 14h00–14h50

Keynote IV by Jean Mark Odobez (Switzerland)

Title:

Chairs: Mounir Sayadi (Tunisia) and Cyril Meurie (France)



Thursday, 15:00 – 15:50

Keynote V by Prof. Nicolas Gillis (Belgium)

Title: Some recent results on nonnegative matrix factorizations with application in hyperspectral imaging

Chairs: Prof. Nawres Khalifa (Tunisia) and Prof. Sébastien Ambellouis (France)



Thursday, 16h00 – 17h40

Regular Session S5: Image processing and Smart City Applications

Chairs: Prof. Sébastien Ambellouis (France) and Alima Damak (Tunisia)

Hadi Ghahremannezhad; Hang Shi; Chengjun Liu, Robust Road Region Extraction in Video Under Various Illumination and Weather Conditions (United States of America)

Riadh Ayachi; Mouna afif; Yahia Said; Abdesslem Ben Abdelali, Traffic Sign Recognition Based On Scaled Convolutional Neural Network For Advanced Driver Assistance System (Tunisia)

Giorgio Cantarini; Nicoletta Noceti; Francesca Odone, Boosting car plate recognition systems performances with agile re-training (Italy)

Mohamed A I Alkalai; Ahmed lawgali, Image-Preprocessing and Segmentation Techniques for Vehicle-Plate Recognition (Libya)

Ankur V Mahtani, Pedestrian Detection and Classification for Autonomous Train (France)

0.1.3 Friday, December 11, 2020

Friday, 9h00 – 9h50

Keynote VI by Prof. Nicolas Dobigeon

Title: Fusion-based change detection for remote sensing images of different resolutions and modalities

Chairs: Prof. Monia Turki (Tunisia) and Atef Hammouda (Tunisia)



Friday, 10h00–11h40

Regular Session S6: Image Processing and Medical Applications

Chairs: Prof. Andrea Truco (Italy) and Prof. Nicolas Gillis (Belgium)

Evgin Gocceri, Convolutional Neural Network Based Desktop Applications to Classify Dermatological Diseases (Turkey)

Giovanna Pappalardo, Dario Allegra, Filippo Stanco, Giovanni Maria Farinella, On the Exploitation of Temporal Redundancy to Improve Polyp Detection in Colonoscopy (Italy)

Nontokozo Mpfu, Binary View Classification of Echograms of the Heart Using Transfer Learning (South Africa)

Masum Shah Junayed, Abu Noman Md Sakib, Nipa Anjum, Md Baharul Islam, Afsana Ahsan Jeny, EczemaNet: A Deep CNN Based Eczema Diseases Classification (Turkey & Bangladesh)

Evgin Goceri, Image Augmentation for Deep Learning Based Lesion (Turkey)



Friday, 11h50–12h40

Keynote VII by Prof. Fabio Solari (Italy)

Title: Natural perception in virtual and augmented reality: a computational model.

Chairs: Prof. François Bremond (France) and Prof. Aicha Bouzid (Tunisia)



Friday, 14h00–15h40

Regular Session S7: Image Processing for Biological applications and Biometry

Chairs: Prof. Abhijit Das (France) and Prof. Sergio Cerutti (Italy)

Erinn Abigan, Luis Cajucom, Josh Ong, Patricia Angela R. Abu, Detection of Microconidia in Microscopy Images of Fusarium oxysporum f. sp. cubense Using Image Processing Techniques and Neural Networks.....(Philippine)

Dhapitha Nesarajan, Lokini Kunalan, Mithun Logeswaran, Sanvitha Kasthuriarachchi, Dilani Lunugalage, Coconut Disease Prediction System Using Image Processing and Deep Learning Techniques.....(Sri Lanka)

Margarita Zaleshina, Alexander Zaleshin, Spatial characteristics of pigeon tracks depending on distribution of visual elements of urban and natural terrain.....(Russia)

Giulia Orru, Marco Micheletto, Gian Luca Marcialis, Are Adaptive Face Recognition Systems still Necessary? Experiments on the APE Dataset.....(Italy and Spain)

May Mowaffaq Abbas, Sonia Neji, Mondher Frikha, Handwritten Recognition: A survey.....(Tunisia)

Friday, 15h40–16h00
Closing session