SORRENTO
Hotel Imperial Tramontano

November 26 – 29, 2019

SITIS 2019

15th IEEE Conference on
Signal Image Technology
and Internet based Systems

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SITIS 2019

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	Université de Bourgogne *Dijon, France*
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	Università degli Studi di Milano *Italy*
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	SIGSMM *Special Interest Group on* *Semantic Multimedia* *Management*
	French Chapter of the Special *Interest Group on Applied* *Computing*

SITIS 2019
The 15th International Conference on
Signal Image Technology & Internet Based Systems

November 26 – November 29, 2019
Imperial Hotel Tramontano
Sorrento, Italy

FOREWORD

This is the 15th edition of the International Conference On Signal-Image Technology & Internet–Based Systems (SITIS 2019). It comprises two tracks, namely SIVT (Signal & Image and Vision Technology) and I-WeCA (Intelligent Web Computing and Application). The focus of the SIVT track is on recent developments in digital signal processing and pays particular attention to evolutions in signal processing, image analysis, vision, coding & authentication, and retrieval techniques. The I-WeCA track focuses on emerging concepts, architectures, protocols, and methodologies for both information management on the Web and the Internet of Things technologies that connect unlimited numbers of smart objects to make our environment more interactive.

In addition to the main tracks, SITIS2019 include three keynotes, twelve workshops and a poster session. The workshops cover a wide range of related topics, namely, the workshops on:

- *Appearance and Imaging (WAI)*
- *Applied Computational Intelligence (ACI)*
- *Artificial Intelligent Approaches for Image Processing (IWAIIP)*
- *Computational Intelligence for Multimedia Understanding (IWCIM)*
- *Distributed, Autonomic and Robust Wireless Networks (DARWiN)*
- *Human Tracking and Behavior Analysis (HTBA)*
- *Intelligent Multimedia Information Retrieval and Applications (I-MIRA)*
- *Knowledge Acquisition, Reuse and Evaluation (KARE)*
- *Numerical Algorithms and Methods for Data Analysis and Classification (NAMDAC)*
- *Open Business Intelligence Systems (OBIS)*
- *Quality of Multimedia Services (QUAMUS)*
- *Ubiquitous implicit BIOmetrics and health signals monitoring for person-centric applications (UBIO)*

189 research contributions were received from all around the world and a peer review process was carried out by each track and workshop. Each paper received 3 or more reviews. The acceptance decision, based on the 3 reviewing reports available for each paper, takes into account the relevance paper to track or workshop topics, scientific correctness and clarity of presentation. As a result, 98 papers are included in the Technical Program and in the conference proceedings. In addition to the accepted contributions, the Technical Program includes three keynote lectures by Dr Josiane Zerubia (INRIA, Sophia-Antipolis,

France), Dr Ernesto Damiani (Artificial Intelligence and Intelligent Systems Institute, Khalifa University UAE, professor at University of Milan, Italy) and Dr Mourad Oussalah (University of Oulu, Finland).

If participants will enjoy SITIS 2019, this is definitely due to the dedication of many who have contributed in different ways to select a fine scientific program and exciting social events for the conference program. We acknowledge the commitment and hard work of the track and workshop chairs who have kept the scientific program in focus and made the discussions interesting and invaluable; we recognize the commitment and contributions of the program committee members and the additional reviewers for evaluating the papers on a very tight time schedule; we also gratefully thank all the members of the local organizing committee. We could not have done it without them.

We thank the Honorary Chair, Dr Ernesto Damiani and the General Co-chairs, Dr Gabriella Sanniti di Baja and Dr Giuseppe De Pietro, for their guidance and precious support. Our gratitude also goes to our academic sponsor institutions for their cooperation, support and assistance: University of Bourgogne, University of Milan, the research groups ImVIA and LIB at the University of Bourgogne, ICAR (Institute of High-Performance Computing and Networking) of the National Research Council of Italy.

Last, but not least, we thank the authors for submitting and trusting their work to the conference.

We hope the scientific program of SITIS 2019 will satisfy your expectations. We also hope that you will find time to discover and appreciate the beauty, flavors and wonders of Sorrento.

The Organizing Committee:
Albert Dipanda, Luigi Gallo, Gabriella Sanniti di Baja
Kokou Yetongnon, Richard Chbeir

SITIS 2019
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KEYNOTES

AI in Cyber Security

Ernesto Damiani
Artificial Intelligence and Intelligent Systems Institute
Khalifa University / University of Milan

Abstract

Recent developments of artificial intelligence (AI) have already had a strong impact on cyber-security technologies. In security products today there is certainly no lack of examples of AI systems capable of extracting key elements from the information flows coming from the network and automatically channeling them to local and remote decision points. These systems are based on the idea of the "telescope", in which a periphery of passive sensors acquires all the information that it can find, and an intelligent system customizes and packages them for local reactions as well as that of remote decision center. A first generation of AI systems following the telescope approach has already demonstrated its potential in various security applications. However, attackers today have learnt to decouple malware infiltration, operation and exfiltration. "Sleeper modules" randomizing hostile activity along time make telescope-based detection more problematic. The second generation of AI systems for cybersecurity is still in a preliminary stage, but it is already leading to a radical change. AI makes it possible to conceive a "cyber-battlefield" composed of geo-space (the physical world), space (satellite and airborne detectors) and cyberspace where (i) humans may not be involved in tactical decisions, and (ii) the information proactively gathered by actions in a part of the environment is used to make automatic decisions (i.e., without going back up a chain of command) in another area. The talk provides an overview of the two generations of AI techniques for cybersecurity and points to some key aspects of the field's evolution.

Biography

Ernesto Damiani is the Senior Director of Artificial Intelligence and Intelligent Systems Institute, Khalifa University, leader of the Big Data area at Etisalat British Telecom Innovation Center, and Full Professor at Università degli Studi di Milano, where he leads the SESAR Lab. Ernesto Damiani's work has more than 15,500 citations on Google Scholar and more than 6,500 citations on Scopus. His areas of interest include Artificial Intelligence, Machine Learning, Big Data Analytics, Edge/Cloud security and performance, and cyber-physical systems. Ernesto has been a recipient of the Stephen Yau Award from the Service Society, of the Outstanding contributions Award from IFIP TC2, of the Chester-Sall Award from IEEE IES, and of a doctorate honoris causa from INSA – Lyon (France) for his contribution to Big Data teaching and research

Cascade Model for Hierarchical Joint Classification

Josiane Zerubia
INRIA, Sophia-Antipolis, France

Abstract

Nowadays the capabilities to monitor the Earth's surface, notably agricultural, urban and built-up areas are becoming more and more important for both civilian and military applications. Within this framework, accurate and time-efficient classification methods are crucial tools required to support the rapid and reliable assessment of ground changes and damages induced for example by a natural disaster, in particular when an extensive area has been affected. Given the substantial amount and variety of data currently available from the last generation of very-high resolution (VHR) satellite missions, the main methodological difficulty is to develop classifiers that are powerful and flexible enough to utilize the benefits of multi-band, multi-resolution, multi-date, and possibly multi-sensor imagery. In this talk, first a brief introduction to MRF will be done, and then a family of novel cascade techniques based on the marginal posterior modes (MPM) criterion will be described. The developed cascade methods have been experimentally validated with complex optical multi-spectral (Pleiades), X-band SAR(COSMO-SkyMed), and C-band SAR (RadarSat-2) data after Haiti earthquake. The experimental results show that the cascade methods are able to provide accurate classification maps from heterogeneous remote sensing data.

Biography

Josiane Zerubia has been a permanent research scientist at INRIA since 1989 and director of research since July 1995. She was successively head of 3 laboratories in remote sensing from 1995 to 2016. She has been professor at ISAE-SUPAERO in Toulouse since 1999.Her main research interest is in signal and image processing using probabilistic models. She also works on parameter estimation, statistical learning, optimization techniques and neural networks (in particular cellular NN). In terms of applications, she worked on speech processing (1982-1988), biological image processing (2001-2011), skin imaging (2009-2018) and remote sensing (1988-). She published nearly 100 journal papers and more than 250 papers in international conferences. She published a book on Markov random fields in image segmentation in 2012 (Now pub.), co-authored with Prof. Zoltan Kato. She was co-editor with Prof. Gabriele Moser of a book on mathematical models for remote sensing image processing in 2018 (Springer pub.). Currently her hindex is 53 and i10 is 184 on Google Scholar, her RG score is 40.03. She has been nominated EURASIP Fellow in 2019. She is also a Fellow of the IEEE (2003) and was IEEE SP Society Distinguished Lecturer (2016-2017). She received the excellency award from Université Cote d'Azur (UCA) in 2016, several best paper awards with her students and collaborators, and was made "Chevalier de l'Ordre National du Mérite" by the President of the French Republic in 2002 for an exemplary career in research.

Text Mining and Social Media Analysis. New horizon for fake news identification

Mourad Oussalah
Information Technology and Electrical Engineering
Centre for Machine Vision and Signal Analysis
University of Oulu, Finland

Abstract

In the era of internet computing, social media offers the possibility to create, receive and share public messages at relatively low cost and ubiquitously in various formats (textual, image /video, sound, geolocation) and across various domains (e.g., politics, entertainment, social, business, crisis management and science). This led to an increasing accumulation of data, often termed as social media big data, which opens up new opportunities for exploring both communication and community patterns, including linguistic, social and network related features for the purpose of individual / community behavior analysis for instance. It has been especially found useful in identifying new trends to interact with customers in business sector; in supporting decision-making processes that rely on performance indicators issued from real time social media data; in predicting the spread of diseases through tracking symptoms in social media data; in gathering intelligence that would prevent occurrence of security threats, among others. Social media analytics has helped governments, political and mass organizations to gain new insights from the communication for deriving useful strategies, organize protests, reach new audience, win new support for their cause and design their future plans accordingly. Nevertheless, this should not hide the negative effect of social media in populating rumor and miss-information or fake news in a way to destabilize the whole community or country, which renders social media analytics task rather challenging. This talk aims to shine the light on this phenomenon and review various strategies that are often used to approach the solution with special consideration to Twitter social media platform. Ultimately, the concept of "new information" is somehow related to the notions of novelty detection in computational linguistics, spam and discourse identification together with leveraging evidence gathered from sources conveying this new-information. Therefore, intuitively, techniques issued from information fusion, filtering, argumentation theory are of interest for this purpose. A set of exemplifications will be employed to illustrate the concept and shed light on new development opportunities.

Biography

Dr. Mourad Oussalah is a recently appointed Research Professor in University of Oulu, Faculty of Information Technology and Electrical Engineering, Centre for Machine Vision and Signal Analysis, where he leads the Social Mining Research Group. Prior joining University of Oulu, he was with the University of Birmingham, UK from 2003-2016. He also held research positions at City University of London and KU Leuven in Belgium, and Visiting Professor position in University of Evry Val Essonnes of France (summer 2006), New Mexico of USA (summer 2009) and Xian of China (Fall 2018). Dr. Oussalah research has concentrated mainly on information and data fusion, text mining, information retrieval and uncertainty handling where he published more than 250 international publications and supervised a dozen of PhD students and more than 40 Msc students, provided more than 20 keynote talks at international conferences and served as PC

members of more than 60 international conferences and won best paper awards at IEEE International Conference on Cybernetic Intelligent Systems 2008, WCE, 2015 and best paper nominee at KDIR 2017. He is a Fellow of Royal Statistical Society and Senior member of IEEE and acted as executive of IEEE SMC UK & Ireland Chapter from 2002 till 2016. Dr. Oussalah is also leading and participating into several EU projects including YoungRes (#823701) (2019-2021) on Youth polarization, Prince (#815362) (2019-2022) on CBRNE incidents, Cutler (#770469) on Coastal Urban development, CBC Karelia (Finland-Russia) on IoT Business Creation (2018-2020), Grage –Marie Skłodowska-Curie action (ID:645706) (2016-2018) on active ageing and elderly living in urban settings. He also secured funding from several foundations (e.g., Finnish Cancer Research, Nokia and Nuffield foundations).

Conference events

SCHEDULE

13:30 - 19:30

15:00 – 15:30 Coffee Break
19:00 – 20:00 Welcome Reception
(room Lobby Area)

Room Aminta

13:30-14:30
Opening Ceremony

14:00 -15:00 Keynote 1
AI in Cyber Security
Ernesto Damiani *(Khalifa University, UAE, University of Milan, Italy)*
Chairs: Luigi Gallo and Giuseppe De Pietro

15:30 -16:30 Keynote 2
Cascade Model for Hierarchical Joint Classification
Josiane Zerubia *(INRIA, Sophia-Antipolis, France)*
Chairs: Albert Dipanda and Gabriella Sanniti di Baja

Room Session	Tuesday November 26, 2019 --- 16:30-18:30
Room Aminta **SIVT-S1**	**TRACK SIVT: Signal Image and Vision Technologies** **SIVT S1: Object detection & image segmentation** *Chair: Neeta Nain, MNIT Jaipur, India* **66 Improved Palmprint Segmentation for Robust Identification and Verification** *Dane Brown and Karen Bradshaw* **92 Detecting Finger-Vein Presentation Attacks Using 3D Shape & Diffuse Reflectance Decomposition** *Jag Mohan Singh, Sushma Venkatesh, Kiran B. Raja, Raghavendra Ramachandra and Christoph Busch* **100 Visual Navigation Using a Webcam Based on Semantic Segmentation for Indoor Robots** *Miho Adachi, Sara Shatari and Ryusuke Miyamoto* **106 Unsupervised Novelty Detection in Video with Adversarial Autoencoder based on Non-Euclidean Space** *Jin-Young Kim and Sung-Bae Cho* **129 An Efficient Dense Network for Semantic Segmentation of Eyes Images Captured With Virtual Reality Lens** *Andres Valenzuela, Claudia Arellano and Juan Tapia* **165 Proposition of convolutional neural network based system for skin cancer detection** *Esther Chabi Adjobo, Amadou Tidjani Sanda Mahama, Pierre Gouton and Joël Tossa*
Room Four Seasons **Joint IWECA-S1 WS DARWIN**	**TRACK I-WECA : Intelligent Web Computing and Applications** **IWECA S1: Learning, Conceptual model and Service** *Chair: Kokou Yetongnon, University of Bourgogne, France* **16 On the Utility of Machine Learning for Service Capacity Management of Enterprise Applications** *Hendrik Müller, Sascha Bosse and Klaus Turowski* **17 Automatic Generation of Custom Tourist Routes** *Edoardo Ardizzone, Giuseppe Castellano, Marco La Cascia, and Giuseppe Mazzola* **137 On the Fusion of Prioritized EL Ontologies** *Truong-Thanh Ma, Rym Mohamed and Zied Bouraoui* **168 Protecting critical business processes of Smart Hospitals from cyber attacks** *Luigi Coppolino, Salvatore D'Antonio, Luigi Romano, Luigi Sgaglione,*

Mario Magliulo and Roberto Pacelli

179 A Microservice-based building block approach for scientific workflow engines: Processing large data volumes with DagOnStar
Dante Sánchez-Gallegos, Diana Di Luccio, Jose Luis Gonzalez-Compean and Raffaele Montella

WS DARWiN: Workshop on Distributed, Autonomic and Robust Wireless Networks
Chair: Wahabou Abdou, University of Bourgognee, France

136 Digital Building Twins – contributions of the ANR McBIM project
Ana Roxin, Wahabou Abdou, Dominique Ginhac, William Dérigent, Daniela Dragomirescu and Laurent Montegut

153 A Blockchain-Based Approach For Optimal And Secure Routing In Wireless Sensor Networks And IoT
Hilmi Lazrag, Abdellah Chehri, Rachid Saadane and Moulay Driss Rahmani

160 Wireless Body Area Network Based on RFID System for Healthcare Monitoring: Progress and Architectures
I Bouhassoune, Rachid Saadane and Abdellah Chehri

Room Session	Tuesday November 26, 2019 --- 18:30-19:30
Room Four Seasons *Poster Session*	**POSTER SESSION** *Chairs: Gabriella Sanniti Di Baja, ICAR, Italy* *Luigi Gallo, ICAR, Italy* **103 A holistic view of the server consolidation and virtual machines placement problems** *Abdulrahman Nahhas, Sascha Bosse, Daniel Staegemann, Matthias Volk and Klaus Turowski* **105 Cognitive Friendly principles based Drop Out rate reduction approach** *Salim Berbar* **146 A Context-Aware Chatbot for tourist destinations** *Fabio Clarizia, Francesco Colace, Massimo De Santo, Marco Lombardi, Francesco Pascale and Domenico Santaniello* **157 On the detection of video's Ethnic Vietnamese Thai Dance Movements** *Tung Pham Thanh, Salem Benferhat, Ma Thi Chau, Truong-Thanh Ma, Karim Tabia and Ha Le Thanh* **39 A Three Phases Procedure for Optic Disc Segmentation in Retinal Images** *Luca Serino and Gabriella Sanniti di Baja* **91 Image sharpening by grid warping with curvature analysis** *Andrey Nasonov and Andrey Krylov* **126 Underwater Fish Classification of Trout and Grayling** *Thitinun Pengying, Marius Pedersen, Jon Yngve Hardeberg and Jon Museth* **119 Analyzing stress situations for blind people** *Youssef Keryakos, Youssef Bou Issa, Abdallah Makhoul and Michel Salomon* **125 A Novel Approach to Detect Outer Retinal Tubulation using U-Net in SD-OCT images** *István Megyeri, Melinda Katona and Laszlo G. Nyul* **12 Data Driven Analysis for Web Service Selection** *Hristian Dimitrov and Olga Georgieva* **47 Eye-Movement and Touch Dynamics: a Proposed Approach for Activity Recognition of a Web User** *Andrea Casanova, Lucia Cascone, Aniello Castiglione, Michele Nappi and Chiara Pero*

Room Session	Wednesday November 27, 2016 --- 10:30-12:30
Room Aminta **SIVT-S2**	**TRACK SIVT: Signal Image and Vision Technologies** **SIVT S2: Image enhancement** *Chair: Albert Dipanda, University of Bourgogne, France* **18 An Adaptive Background Modelling Method Based on Modified Running Averages** *Nahlah Algethami and Sam Redfern* **24 Deterministic vs. random initializations for k-means color image quantization** *Henryk Palus and Mariusz Frąckiewicz* **57 Enhanced Morphological Filtering for Wavelet-based Changepoint Detection** *Mattia Stasolla and Xavier Neyt* **70 An investigation of denoising parameters choice in two Perona-Malik models** *Andrey Nasonov, Nikolay Mamaev and Andrey Krylov* **74 Dehazing with Recovery Level Map: Suppressing Over-Enhancement and Residual Haze** *Kentaro Iwamoto, Hiromi Yoshida and Youji Iiguni* **83 Low-Light Image Enhancement via Adaptive Shape and Texture Prior** *Kazuki Kurihara, Hiromi Yoshida and Youji Iiguni*
Room Four Seasons *Joint* *WS IWCIM* *WS UBIO*	**WS IWCIM: Workshop on Computational Intelligence for Multimedia Understanding** *Chair: Davide Moroni, Signals & Images LAB, ISTI-CNR, Italy* **115 Autoencoder Based Dimensionality Reduction of Feature Vectors for Object Recognition** *Reyhan Kevser Keser and Behçet Uğur Töreyin* **120 Augmented Reality for Tissue Converting Maintenance** *Simone Coscetti, Davide Moroni, Gabriele Pieri and Marco Tampucci* **158 An interactive system for motor and cognitive assisted activities** *Simone Coscetti and Massimo Magrini* **186 Towards a behavior analysis of remote-sensed vessels** *Marco Reggiannini, Emanuele Salerno, Massimo Martinelli, Marco Righi, Marco Tampucci and Luigi Bedini* **WS UBIO: Workshop on Ubiquitous implicit BIOmetrics and health signals monitoring for person-centric applications** *Chair: Stefano Ricciardi, University of Molise, Italy* **138 Ubiquitous Face-Ear Recognition Based on Frames Sequence _camera-ready** *Liberato Iannitelli, Stefano Ricciardi* **144 MUBIDUS I - Multibiometric and Multipurpose Dataset** *Luigi De Maio, Riccardo Distasi and Michele Nappi*

Room Session	Wednesday November 27, 2019 --- 14:00-16:00
Room Aminta Joint I-WECA S2 WS QUAMUS	**TRACK I-WECA : Intelligent Web Computing and Applications** **IWECA S2: Web applications** *Chair: Wahabou Abdou, University of Bourgognee, France* **46 Exploring the Specificities and Challenges of Testing Big Data Systems** *Daniel Staegemann, Matthias Volk, Abdulrahman Nahhas, Mohammad Abdallah and Klaus Turowski* **55 Translation of Sign Language Glosses to Text Using Sequence-to-Sequence Attention Models** *Nikolaos Arvanitis, Constantinos Constantinopoulos and Dimitrios Kosmopoulos* **68 Web technologies enable agile color management** *Philippe Colantoni, Jean-Baptiste Thomas, Alain Trémeau and Jon Yngve Hardeberg* **75 BigBank: A GIS Integrated AHP-TOPSIS Based Expansion Model for Banks** *Sadia Sharmin and Kh. Solaiman* **97 Integral Kinesiology Feedback for Weight and Resistance Training** *Steve Mann, Cayden Pierce, Bei Cong Zheng, Jesse Hernandez, Clara Scavuzzo, and Christina Mann* **WS QUAMUS: Workshop on Quality of Multimedia Services** **166 Full reference mesh visual quality assessment using pre-trained network and quality indices.** *Ilyass Abouelaziz, Aladine Chetouani, Mohammed El Hassouni and Hocine Cherifi*
Room Four Seasons WS HTBA	**WS HTBA: Workshop on Human Tracking and Behaviour Analysis** *Chair: Cyrille Migniot, ImViA, University of Bourgogne, France* **23 Anticipation of Everyday Life Manipulation Actions in Virtual Reality** *Fatemeh Ziaeetabar, Stefan Pfeiffer, Minija Tamosiunaite and Florentin Wörgötter* **45 Abnormal Crowd Behaviour Recognition in Surveillance Videos** *Franjo Matković, Darijan Marčetić and Slobodan Ribarić* **48 Time Unification for Local Binary Pattern Three Orthogonal Planes** *Reda Belaiche, Cyrille Migniot, Dominique Ginhac and Fan Yang* **84 Fine-grained Action Recognition in Assembly Work Scenes by Drawing Attention to the Hands** *Takuya Kobayashi, Yoshimitsu Aoki, Shogo Shimizu, Katsuhiro Kusano and Seiji Okumura* **131 Shot Detection in Racket Sport Video at the Frame Level Using A Recurrent Neural Network** *Shuto Horie, Yuji Sato, Junko Furuyama, Masamoto Tanabiki and Yoshimitsu Aoki*

Room Session	Wednesday November 27, 2019 --- 16:30-18:30
	TRACK SIVT: Signal Image and Vision Technologies **SIVT S3: Face identification** *Chair: Luigi Gallo, ICAR, Italy* **33 Light-weight Visual Feature based Labeling (LVFL) for Unsupervised Person Re-identification** *Sridhar Raj S, Munaga V N K Prasad and Ramadoss Balakrishnan*

Room Aminta **SIVT S3**	**52 Performance Comparison of Deep Learning Based Face Identification Methods for Video under Adverse Conditions** *Galip Pala and Cigdem Eroglu Erdem* **67 Multi-Angled Face Segmentation and Identification using Limited Data** *Dane Brown* **95 Robust Morph-Detection at Automated Border Control Gate using Deep Decomposed 3D Shape & Diffuse Reflectance** *Jag Mohan Singh, Raghavendra Ramachandra, Kiran B Raja and Christoph Busch* **162 Face Recognition - A One-Shot Learning Perspective** *Sukalpa Chanda, Asish Chakrapani Gv, Anders Brun, Anders Hast, Umapada Pal and David Doermann* **104 Visible To Band Gender Classification: An Extensive Experimental Evaluation Based On Multi-spectral Imaging** *Narayan Vetrekar, R.Raghavendra, Kiran B. Raja, Sushma Venkatesh, Rajendra S. Gad and Christoph Busch*
Room Four Seasons ***Joint*** ***WS WAI*** ***WS KARE***	**WS WAI: Workshop on Appearance and Imaging** *Chair: Jean-Baptiste Thomas, University of Bourgogne, France* **54 An online tool for displaying and processing spectral reflectance images** *Philippe Colantoni, Jean-Baptiste Thomas, Mathieu Hebert and Alain Trémeau* **116 Perceived Effects of Static and Dynamic Sparkle in Captured Effect Coatings** *Jií Filip, Martina Kolafová and Radomír Vávra* **127 Assessment of OLED Head Mounted Display for vision research with Virtual Reality** *Matteo Toscani, Raquel Gil, Dar'ya Guarnera, Giuseppe Claudio Guarnera, Assim Kalouaz and Karl R. Gegenfurtner* **156 Quality assessment of reconstruction and relighting from RTI images: application to manufactured surfaces** *Jean-Baptiste Thomas, Gaëtan Le Goïc, Yuly Castro, Marvin Nurit, Alamin Mansouri, Marius Pedersen and Abir Zendagui* **WS KARE: Workshop on Knowledge Acquisition Reuse & Evaluation** *Chair: Davy Monticolo, Polytechnical Institue of Lorraine, France* **53 Design and Implementation of a Web-basedCollaborative Authoring Tool for the Virtual Reality** *Nicola Capece, Ugo Erra, Giuseppe Losasso and Francesco D'Andria* **94 How to Identify competence from interactions** *Merzouki Hocine, Matta Nada and Atifi Hassan* **107 Business Matching for Event Management and Marketing in Mass Based on Predictive Algorithms** *Anas Sabbani and Anass El Haddadi* **117 Agent-based Approach of Multi-Structures Homecare Planning Problem** *Fatima Ezzahra Hammdani and Davy Monticolo*

Thursday November 28, 2019

10:00 - 18:30

10:00 – 10:30 Coffee Break …fast
16:00 – 16:30 Coffee Break
20:30 A Taste of Sorrento (Buffet Dinner)
(room: Hotel Restaurant)

Room Aminta

09:00 -10:00 Keynote 3
Text Mining and Social Media Analysis.
New horizon for fake news identification
Mourad Oussalah (University of Oulu, Finland)
Chairs: Luigi Gallo and Kokou Yetongnon

Room Session	Thursday November 28, 2019 --- 10:30-12:30
Room Aminta **SIVT-S4**	**TRACK SIVT: Signal Image and Vision Technologies** **SIVT S4: Deep learning applications** *Chair: Gabriella Sanniti Di Baja, ICAR, Italy* **5 Convolution Neural Networks for Arabic Font Recognition** *George Sakr, Ammar Mhanna and Rony Demerjian* **8 Manifold extraction in fluorescent stack via deep learning** *Jianfeng Cao and Hong Yan* **11 Comparing Deep Learning Models for Road Asset Detection and Classification in LiDAR Point Cloud** *George Sakr, Ary Berberian and Patrick Habib* **38 Machine Learning Based Detection of Hearing Loss Using Auditory Perception Responses** *Muhammad Ilyas and Amine Nait-Ali* **49 Benchmarking the Imbalanced Behavior of Deep Learning Based Optical Flow Estimators** *Stefano Savian, Mehdi Elahi and Tammam Tillo* **122 Spotting insects from satellites: modeling the presence of Culicoides Imicola through Deep CNNs** *Angelo Porrello, Stefano Vincenzi, Pietro Buzzega, Annamaria Conte, Carla Ippoliti, Luca Candeloro, Alessio Di Lorenzo, Andrea Capobianco Dondona and Simone Calderara* **147 Breast Ultrasound Image Classification using a Pre-trained Convolutional Neural Network** *Mohammad I. Daoud, Samir Abdel-Rahman and Rami Alazrai*
Room Four Seasons **WS** **IWAIIP S1**	**WS IWAIIP: Workshop on the Artificial Intelligent Approaches for Image Processing** **IWAIIP S1: SESSION 1** *Chair: Thaweesak Yingthawornsuk, KMUTT, Thailand* **56 Loop Closure Detection for Monocular Visual Odometry : Deep-Learning Approaches Comparison** *Mohamed Ali Sedrine, Wided Souidene Mseddi, Takoua Abdellatif and Rabah Attia* **128 Using entropy and Marr wavelets to automatic feature detection for image matching** *Beibei Cui and Jean-Charles Créput* **176 Gender Recognition for juvenile unconstrained faces using Gabor-MeanPool-DCT Feature Model and SVM-Kernel Optimization** *Sandeep Kumar Gupta and Neeta Nain* **182 Kinematics Solution using Metaheuristic Agorithms** *Ashwani Kumar, Vijay Kumar Banga, Darshan Kumar and Thaweesak Yingthawornsuk*

	183 Image patch similarity through a meta-learning metric based approach *Patricia Suarez, Angel Sappa and Boris Vintimilla* **187 Inverse Kinematics Solution of Programmable Universal Machine for Assembly (PUMA) Robot** *Gurjeet Singh, Vijay Kumar Banga and Thaweesak Yingthawornsuk* **189 An interactive table with temperature sensors LED** *Sirimonpak Suwannakhun*

Room Session	*Thursday November 28, 2019 --- 14:00-16:00*
Room Aminta **SIVT-S5**	**TRACK SIVT: Signal Image and Vision Technologies** **SIVT S5: Theory and methods** *Chair: Jean-Baptiste Thomas, University of Bourgogne, France* **4 Grid Search Optimization(GSO) Based Future Sales Prediction For Big Mart** *Gopal Behera and Neeta Nain* **6 Template-Based Surface Estimation Using Statistical Shape Model** *Jens Krenzin and Olaf Hellwich* **44 DCNN-Based Screw Detection for Automated Disassembly Processes** *Erenus Yildiz and Florentin Woergoetter* **69 Unsupervised Spectral Clustering of Music-Related Brain Activity** *Stavros Ntalampiras* **77 An Auxiliary Method Based on Hyperspectral Reflectance for Presentation Attack Detection** *Shiwei Li, Mohsen Ardabilian and Abdel-Malek Zine* **112 Cycle Consistent InfoGAN for Speech Enhancement in Various Background Noises** *Wonsup Shin and Sung-Bae Cho* **164 Human Tracking for Children Behavior Analysis in Nursery Schools** *Yuan Lin, Yuki Obuchi, Xueting Wang, Toshihiko Yamasaki, Satoshi Toriumi, Mikihisa Hayashi, Sachiko Nozawa, Midori Takahashi, Toshihiko Endo and Kiyomi Akita*
Room Four Seasons **WS** **I-MIRA S1**	**WS I-MIRA: Workshop on Intelligent Multimedia Information Retrieval and Applications** *Chair: Andrea Kutics, International Christian University, Japan* **151 Automatic Phone Boundary Detection for Phonetic Transcription using Fully Convolutional Networks** *Shogo Okada, Andrea Kutics and Akihiko Nakagawa* **78 CAD3A: a web-based application to visualize and semantically enhance CAD assembly models** *Katia Lupinetti, Daniela Cabiddu, Franca Giannini and Marina Monti* **79 High Performance Personal Adaptation Speech Recognition Framework by incremental learning with plural Language Models** *Yukino Ikegami, Rainer Knauf, Ernesto Damiani, Setsuo Tsuruta, Yoshitaka Sakurai, Eriko Sakurai, Andrea Kutics and Akihiko Nakagawa*

Room Session	Thursday November 28, 2019 --- 16:30-18:30
Room Aminta **SIVT S6**	**TRACK SIVT: Signal Image and Vision Technologies** **SIVT S6: Applications** *Chair: Neeta Nain, MNIT Jaipur, India* **7 Efficient Mean/Sigma Estimation at Arbitrary Spatial Positions with Arbitrary Scales within A 2D Image** *Wei-Jun Chen* **36 Using Vehicle-Mounted Camera to Collect Information for Managing Mixed Traffic** *Elnaz Namazi, Rein Nisja Holthe-Berg, Christoffer Skar Lofsberg and Jingyue Li* **51 The Density-Aware Estimation Network for Vehicle Counting in Traffic Surveillance System** *Sorn Sooksatra, Atsuo Yoshitaka, Toshiaki Kondo and Pished Bunnun* **82 MeltdownCrisis: Dataset of Autistic Children during Meltdown Crisis** *Marwa Masmoudi, Salma Kammoun Jarraya and Mohamed Hammami* **102 Creation: Computational Constrained Travel Aid for Object Detection in Outdoor Environment** *Kanak Manjari, Madhushi Verma and Gaurav Singal*
Room Four Seasons **Joint** **WS ACI** **WS OBIS**	**WS ACI: Workshop on Applied Computational Intelligence** *Chair: Marco Anisetti, Università degli Studi di Milano, Italy* **35 Improving Probabilistic Flooding Using Topological Indexes** *Dawit Kifle, Gabriele Gianini and Mulugeta Libsie* **43 A Simplified Spectrum Sensing Implementation based on SVM, KNN and TREE Algorithms** *Mohamed Saber, Abdessamad El Rharras, Rachid Saadane, Hatim Kharraz Aroussi and Abdellah Chehri* **118 Situated Visualization in Augmented Reality: Exploring Information Seeking Strategies** *Giuseppe Caggianese, Valerio Colonnese and Luigi Gallo* **135 Energy Efficiency Proposal for IoT Call Admission Control in 5G Network** *A Slalmi, Hatim Kharraz, Rachid Saadane, Chaibi Hasna, Abdellah Chehri and Gwanggil Jeon* **WS OBIS: Workshop on Open Business Intelligence Systems** *Chair: Abdelaziz Elfazziki, Cadi Ayyad university, Morocco* **80 A System for collecting and analyzing road accidents Big Data** *Hasna Elalaoui Elabdallaoui, Abdelaziz Elfazziki, Fatima Zohra Ennaji and Mohamed Sadgal* **90 Author Gender Identification from Arabic Youtube Comments** *Jihad Zahir, Youssef Mehdi Oukaja and Hajar Mousannif* **93 Recommending Moodle Resources Using Chatbots** *Kamal Souali, Othmane Rahmaoui, Mohammed Ouzzif and Ismail El Haddioui* **98 A Hadoop based Framework for Soil Parameters Prediction** *Asmae El Mezouari and Mehdi Najib*

Room Session	Friday November 29, 2019 --- 10:30-12:30
Room Aminta **WS** **NAMDAC**	**WS NAMDAC: Workshop on Numerical Algorithms and Methods for Data Analysis and Classification** *Chairs: Ardelio Galletti, University of Naples Parthenope, Italy* * Livia Marcellino, University of Naples Parthenope, Italy* **88 Hybrid Data Assimilation: an Ensemble-Variational Approach** *Edward Lim, Miguel Molina-Solana, Christopher Pain, Yi-Ke Guo and Rossella Arcucci* **114 A Gaussian Recursive Filter Parallel Implementation with Overlapping** *Pasquale De Luca, Ardelio Galletti and Livia Marcellino* **130 Data Assimilation for Parameter Estimation in Economic Modelling** *Philip Nadler, Rossella Arcucci and Yike Guo* **180 Bagging to Improve the Calibration of RSSI Signals in Bluetooth Low Energy (BLE) Indoor Distance Estimation** *Antonio Maratea, Giuseppe Salvi and Salvatore Gaglione*
Room Four Seasons **WS** **IWAIIP S2**	**WS IWAIIP: Workshop on the Artificial Intelligent Approaches for Image Processing** **IWAIIP S2: SESSION 2** *Chair: Thittaporn Ganokratanaa, CU, Thailand* **10 Online Checking System for Drinking Quality of Drinking Water Vending Machine** *Teerapong Boonlar* **14 Recognizing The Illegal Parking Patterns of Cars on The Road in front of The Bus Stop Using The Support Vector Machine** *Mahasak Ketcham, Thittaporn Ganokratanaa, Eakbodin Gedkhaw, Manussawee Piyaneeranart and Worawut Yimyam* **19 Design and Development of Applications on Smartphone of connection to social media via 3D** *Sirimonpak Suwannakhun* **58 Electrical Impedance Of Breast's Tissue Classification By Using Bootstrap Aggregating** *Narumol Chumuang, Patiyuth Pramkeaw and Adil Farooq* **76 Development of control system for opening and closing electrical equipment with Thai voice command using by k-Nearest Neighbor Technical** *Worawut Yimyam, Thidarat Pinthong and Mahasak Ketcham* **188 ECG Classification with Modification of Higher-Order Hjorth Descriptors** *Inya Wannawijit, Suvimon Kaiwansil, Sutthisak Ruthaisujaritkul and Thaweesak Yingthawornsuk*

Enjoy!
Wishing you well

Conference Schedule at a Glance

Time	Tuesday November 26, 2019		Wednesday November 27, 2019		Thursday November 28, 2019		Friday November 29, 2019	
	Registration (14:00 - 18:00)		Registration (08:30 - 18:00)		Registration (08:30 - 18:00)		Registration (9:30 - 10:30)	
	Aminta	*Four Seasons*	*Aminta*	*Four Seasons*	*Aminta*	*Vesuvius*	*Aminta*	*Vesuvius*
09:00 - 09:30					*Keynote - Room: Aminta* **Mourad Oussalah**			
09:30 - 10:00								
10:00 - 10:30			*Coffee Break… fast*		*Coffee Break*		*Coffee Break… fast*	
10:30 - 11:00			SIVT S2	*Joint session* WS IWCIM WS UBIO	SIVT S4	WS IWAIIP S1	WS NAMDAC	WS IWAIIP S2
11:00 - 11:30								
11:30 - 12:00								
12:00 - 12:30								
12:30 - 13:00								
13:00 - 13:30								
13:30 - 14:00	**Opening ceremony**							
14:00 - 14:30	*Keynote - Room: Aminta* **Ernesto Damiani**		*Joint session* i-WECA S2 WS QUAMUS	WS HTBA	SIVT S5	WS I-MIRA		
14:30 - 15:00								
15:00 - 15:30	*Coffee Break*							
15:30 - 16:00	*Keynote - Room: Aminta* **Josiane Zerubia**							
16:00 - 16:30			*Coffee Break*		*Coffee Break*			
16:30 - 17:00	SIVT S1	*Joint session* i-WECA S1 WS DARWiN	SIVT S3	*Joint session* WS WAI WS KARE	SIVT S6	*Joint session* WS ACI WS OBIS	*That's it folks*	
17:00 - 17:30								
17:30 - 18:00								
18:00 - 18:30								
18:30 - 19:00	**Posters session** Room: Four seasons							
19:00 - 19:30								
Social Event	**Welcome reception** Food & drinks (19:00 - 20:00) Room: Lobby area		**Conference Banquet** Dinner (20:30) Room: hotel restaurant		**A Taste of Sorrento** Buffet dinner (20:30) Room: hotel restaurant			