



# 2019

December 8-10, 2019

Abu Dhabi, UAE

## IEEE International Conference on **IMAGING SYSTEMS & TECHNIQUES**



# 2019 CONFERENCE PROGRAM

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# Welcome Message from the Chairman

On behalf of the Technical and Local Committee of the 2019 IEEE International Conference on Imaging Systems and Techniques (IST 2019) and IEEE International School on Imaging, I welcome you to Abu Dhabi, UAE.

This year, scientists and engineers from all over the world meet to explore the design principles, development and applications of new imaging technologies, image analysis and processing methodologies, computer vision systems, clinical diagnostic devices, and material inspection and monitoring measurements, systems, and techniques.

In a rapidly changing global economy, experiencing an unparalleled integration of science and technology towards the development of efficient, high-resolution, high-specificity imaging technologies: let us see this event as unique opportunity not only to exchange and disseminate knowledge but also bridge multidisciplinary areas like engineering with health science leading to the creation of new knowledge, and establish global collaborative multidisciplinary opportunities by tightening collaborations among industry, academia, and healthcare industry.

Historically, this is the fifteenth consecutive year, following the successful IST events held previously in Stresa, Italy, Niagara Falls, Canada, Minori, Italy, Krakow, Poland, Chania, Greece, Shenzhen, China, Thessaloniki, Greece, Penang Island, Malaysia, Manchester, UK, Beijing, China, Santorini, Greece, Macau, China, Chania, Greece, Beijing, China, Krakow, Poland where experts from all over the world meet to trigger an in-depth discussion of imaging methodologies and its applications shaping the future, and identifying emerging imaging trends.

I would like to thank the TC-19 on Imaging Measurements and Systems Technical Committee, IEEE Instrumentation and Measurement Society, the organizers of the Conference, Professor Mohammed Ghazal, Abu Dhabi University, UAE, Professor Ayman El-Baz, University of Louisville, USA, the strategic partner Abu Dhabi National Oil Company (ADNOC), the local Organizing Committee, the IST Organizing Committee, for the outstanding organization of the event; Special thanks to the TC-19 Technical Committee members, namely, Professor Wuqiang Yang, University of Manchester, UK, Professor Lijun Xu, Beihang University, China, Professor Lihui Peng, Tsinghua University, China, Suman Shrestha, Varex Imaging Corporation, Santa Clara, USA, Professor Matteo Pastorino, University of Genoa, Italy, Professor Michalis Zervakis, Technical University of Crete, Greece, Professor Jacob Scharcanski (UFRGS), Brazil, and Professor Cesare Svelto, Polytechnic of Milan, Italy, for their significant contributions towards the dissemination of this event worldwide and promotion of quality and standards. Many thanks to Keerthi Valluru, University of California, San Francisco, USA, Bhargava Chinni, University of Rochester Medical Center, NY, USA, Aditi Deshpande, University of Arizona, USA, Dr. Rui Fan, The Hong Kong University of Science and Technology, China, Dr. Tannaz Farrahi, University of Virginia, USA, Dr. Kostas Marias, FORTH, Greece, Dr. Vangelis Sakkalis, FORTH, Greece, George Livanos, Technical University of Crete, Greece, Professor Antonios Gasteratos, DUTH, Greece, Professor Ahmed Hussein, Manhattan College, USA, Professor Yi Wang, Manhattan College, USA, for their tireless efforts and significant contributions towards the organization of the IST. Special thanks are extended to Laura LeBlanc and Chris Dyer, Conference Catalysts, LLC, Administrators of the IST and the School of Imaging for their outstanding and meritorious efforts to successfully administrate these two major events. Many thanks go to the dedicated reviewers which did an excellent job to preserve quality and promote academic excellence.

I hope you enjoy your stay in Abu Dhabi, UAE, and find the 2019 IEEE International Conference on Imaging Systems and Techniques (IST2019) and the IEEE International School on Imaging a rewarding opportunity for advancement of knowledge as well as a way to generate unique global collaborative opportunities among industry, academia, and healthcare professionals.

George C. Giakos, Fellow of the IEEE  
General Chairman IEEE IST Conference  
Director, IEEE International School on Imaging  
New York, United States

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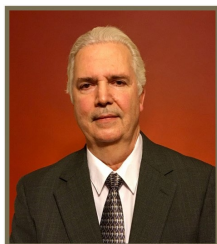
## Keynote Speakers

### Eng. Mohamed Al Mutawa



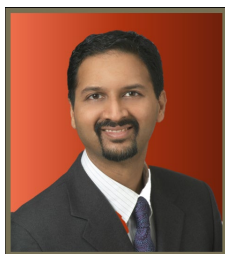
Mohamed Al Mutawa Leading the Operations Excellence Mission in ADNOC HQ, whereby, Maintenance, Integrity, Safety, AI & Digitalization are key elements of his Strategic accountability in ADNOC Value Chain; furthermore, he is a Key Upstream Leader in many assignments of Tactical & Technology Projects. He is engaged with ADNOC for 15 Years driving several roles successfully, holding educational degrees in Petroleum Engineering & International Business.

### Dr. Manuel F. Casanova

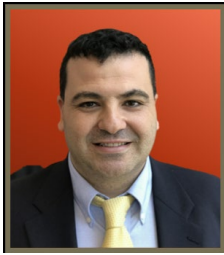


Manuel F. Casanova, MD, belonged to the founding board of the National Alliance for Autism Research (now Autism Speaks) and the Autism Tissue Board. He has served on the Board of Directors or Scientific Advisory Board of numerous organizations (e.g., Autism Research Institute, Generation Rescue, On Mental Health, Families for Effective Autism Treatment, Clearly Present Foundation) and is presently on the editorial board of 15 different medical journals. Dr. Casanova has provided a large number of plenary lectures including a magisterial presentation at the World Congress of Autism. His research has been recognized by a EUREKA award from the NIMH for the introduction of repetitive Transcranial Magnetic Stimulation (rTMS) in the Therapy of autism spectrum disorders. He has published over 200 articles in peer reviewed journals, 85 book chapters and edited five books

### Dr. Anant Madabhushi



Anant Madabhushi, Ph.D, is the Director of the Center for Computational Imaging and Personalized Diagnostics (CCIPD) and the F. Alex Nason Professor II in the Department of Biomedical Engineering, Case Western Reserve University. He joined the Department of Biomedical Engineering, Case Western Reserve University in 2012. He is currently a Fellow of the AIMBE, IEEE, and Wallace H. Coulter Foundation. He serves as an Associate Editor for multiple scientific journals including IEEE Transactions on Biomedical Engineering, BMC Cancer, and a Guest Editor for Medical Physics. In 2015, he was named as one of Crain's Business Cleveland "40 under 40". Dr. Madabhushi has had considerable experience in leading large inter-disciplinary projects, having either served or is serving as the lead PI on multi-institutional, multi-site grants 1U24CA199374-01, R01CA136535, 1R01CA208236-01A1, and CDMRP LC130463. In 2018, Dr. Madabhushi's work on developing "smart computers for identifying lung cancer patients who will benefit from chemotherapy" was ranked as one of the top 10 medical breakthroughs of 2018 by Prevention Magazine.



### **Dr. Ayman El-Baz**

Ayman El-Baz, Ph.D., Distinguished Professor and Chair of the Bioengineering Department at the University of Louisville, KY. In 2019 he was elected as an AIMBE fellow for outstanding achievement in medical imaging and outstanding leadership in education, scholarship, and service to the field of bioengineering. Moreover, Dr. El-Baz was named a Coulter Fellow for his contribution to biomedical translational research. In 2018, Dr. El-Baz was selected by the Biomedical Engineering Society to be an ABET program evaluator. Dr El-Baz has 20 years of hands-on experience in the fields of bio-imaging modeling and non-invasive computer-assisted diagnosis systems. He has been PI and Co-PI of many research projects funded by DOD, NIH, NAS, NSF, the Coulter foundation, the American Cancer Society, KCF, and KSEF. He has authored or coauthored more than 700 technical articles.

## **IEEE INTERNATIONAL SCHOOL OF IMAGING**



### **Dr. George C. Giakos**

G.C. Giakos is a Professor and the Director of the Laboratory for Cognitive Imaging and Neuromorphic Engineering (CINE), Bioinspired Photonics and Distributed Vision Systems, at Manhattan College, NY. His research is articulated in imaging technology innovation, through the integration of physics, engineering and computational science. He is the recipient of the Fulbright Specialist Award, granted by the U.S. Department of State, July 2019. He has been recognized for "his leadership efforts in advancing the professional goals of IEEE" by receiving the 2014 IEEE-USA Professional Achievement Award" in "recognition of his efforts in strengthening links between industry, government and academia". He serves as Founding Chairman IEEE TC19 Imaging Systems, Founding Chairman IEEE International Conference on Imaging Systems and Techniques, Founding Director IEEE International School on Imaging, Founding Director IEEE Industry-Academia Forum. He has been elected Fellow of the IEEE and he is a Distinguished Faculty Fellow of the Office of Naval Research. He has been awarded with 20 patents and authored more than 250 peer-review papers.



### **Dr. Kostas Marias**

Kostas Marias, PhD, is an Associate Professor in Medical Image Processing at the Dept. of Electrical & Computer Engineering at the Hellenic Mediterranean University in Greece and is the head and founder of the Computational Biomedicine Laboratory at FORTH-ICS. He served as Principal Researcher at the Institute of Computer Science (ICS-FORTH) since 2006. During 2000-2002, he worked as a Researcher at the University of Oxford and from 2003-2006 as Associated Researcher at FORTH-ICS. He received his PhD in Medical Image Analysis and Medical Physics from UCL Royal Free & University College Medical School working jointly with the University of Oxford, UK. He has coordinated two EC projects on cancer modelling (ContraCancrum and TUMOR projects), and has actively participated in several other EC funded projects developing ICT technology. He is co-author of more than 200 papers in international journals, books and conference proceedings focusing

on medical image processing and analysis, biomedical informatics, image-based modelling and radiomics/deep learning medical imaging applications.



**Dr. Michalis Zervakis**

Michalis E. Zervakis holds a Ph.D degree from the University of Toronto, Department of Electrical Engineering. He is serving as Professor at the department of Electronic and Computer Engineering and directing the Digital Image and Signal Processing Laboratory (DISPLAY) at the Technical University of Crete. His research interests include modern aspects of signal and image processing, data mining and pattern recognition, imaging systems and integrated automation systems. Under his direction, the DISPLAY lab [www.display.tuc.gr](http://www.display.tuc.gr) covers a wide range of design, analysis, implementation and validation areas. Applications include visual scene analysis and surveillance, bioinformatics, biosignal analysis and medical Imaging, biomarker selection from mass genomic data, time-frequency biosignal and EEG characterization, modeling of disease state and progression, as well as cancer research on diagnosis & prognosis. He is coauthor in more than 280 scientific papers in international journals and conference proceedings. He has participated in several national and European research projects and has participated in the scientific committees of several IEEE conferences.



## Saturday, December 7<sup>th</sup>

**19:00 – 22:00**

**Reception Dinner at the ADNEC**

*Room: Capital Suite 5*

## Sunday, December 8<sup>th</sup>

**7:30 - 8:30**

**Registration**

*Room: Foyer*

**8:45 AM-9:00 AM**

**UAE National Anthem & a short video about Abu Dhabi University**

**9:00 - 9:15**

**Welcome Message from the IST General Chair - George Giakos**

*Room: Thamama - Capital Suite 7*

**9:15 - 9:30**

**Welcome Message from the Chancellor of Abu Dhabi University – Prof. Waqar Ahmed**

*Room: Thamama - Capital Suite 7*

### INTERNATIONAL SCHOOL OF IMAGING KEYNOTES

**9:30 AM - 10:10 AM**

**Keynote 1:**

**Mohamed Al Mutawa**

**Abu Dhabi National Oil Company (ADNOC)**

**UAE**

*Room: Thamama - Capital Suite 7*

**10:10 AM-10:50 AM**

**Keynote 2:**

**Dr. Manuel F. Casanova**

**University Of South Carolina School of Medicine**

**USA**

*Room: Thamama - Capital Suite 7*

**10:50 AM-11:30 AM**

**Keynote 3:**

**Dr. Anant Madabhushi**

**Case Western Reserve University**

**USA**

*Room: Thamama - Capital Suite 7*

**11:15 AM – 12:00 PM**

**Coffee Break**

**12:00 PM-12:40 PM**

**Keynote 4:**

**Dr. Ayman El-Baz**

**University of Louisville**

**USA**

*Room: Thamama - Capital Suite 7*

## **INTERNATIONAL SCHOOL OF IMAGING OPEN DISCUSSIONS**

**Open Discussion 1**

**12:40 PM – 13:20 PM**

**Dr. Michalis Zervakis,**

**Technical University of Crete,**

**Greece**

*Room: Thamama - Capital Suite 7*

**13:30 PM - 14:30 PM**

**Lunch Break**

*Room: Capital Suite 5*

**14:30 PM-15:10 PM**

**Open Discussion 2**

**Dr. George Giakos**

**Manhattan College**

**USA**

**15:15 - 15:30**

**Break**

*Room: Capital Suite 5*

**15:30 - 16:30**

**Imaging Sensors and Detectors**

*Room: Marban - Capital Suite 4*

*Chairs: Luay Fraiwan (Abu Dhabi University)*

*Hugh McCann (The University of Edinburgh, United Kingdom (Great Britain))*

*Evdoxios Mimis (Ormylia Foundation, Greece)*

**15:30**

**A Quasi-Parallel DAQ Scheme for Wavelength Modulation Spectroscopy Tomography**

*Godwin Enemali (University of Edinburgh, United Kingdom (Great Britain))*

*Chang Liu (University of Edinburgh, United Kingdom (Great Britain))*

*Nick Polydorides (The University of Edinburgh, United Kingdom (Great Britain))*

*Hugh McCann (The University of Edinburgh, United Kingdom (Great Britain))*

**15:45**

**A Cognitive Radar for Classification of Resident Space Objects (RSO) operating on Polarimetric Retina Vision Sensors and Deep Learning**

Martin Nowak (Manhattan College, USA)  
Anthony Beninati, (Manhattan College, USA)  
Nicolas Douard (Manhattan College, USA)  
Joe Lanzi (Manhattan College, USA)  
Natalie Lanzi (Manhattan College, USA)  
Ridwan Hussain (The Bronx High School of Science, USA)  
Yi Wang (Manhattan College, USA)  
Suman Shrestha (Manhattan College, USA)  
Christos Bolakis (Manhattan College, USA)  
Alexandros E. Tzikas (Aristotle University of Thessaloniki Greece)  
George C. Giakos (Manhattan College, USA)

**16:00**

**Accurate motion plan of ultrasonic linear array transducer for non-destructive 3D endoscopy of iconic cultural heritage assets**

Stamatis A. Amanatiadis (Aristotle University of Thessaloniki & Ormylia Foundation, Greece)  
Georgios Karagiannis (ORMYLIA Foundation, Greece)  
Evdoxios Mimis (Ormylia Foundation, Greece)

**16:15**

**Observed phenomenon in grouting duct detection progress using capacitive sensing technique**

Nan Li (Northwestern Polytechnical University & Beijing University of Technology, China)  
Hangben Du (Northwestern Polytechnical University, China)  
Mingchen Cao (Manufacturing Systems Engineering, China)  
Lina Wang (Northwestern Polytechnical University, China)  
Yu Xiaojun (Northwestern Polytechnical University, China)

**15:30 – 16:30**

**Topics in Medical Imaging**

*Room: Thamama - Capital Suite 7*

*Chairs: Wael Elmedany (University of Bahrain)*

*Vangelis Sakkalis (Foundation for Research and Technology (FORTH), Greece)*

*William Runciman (University of South Australia, Australia)*

**15:30**

**Multi-channel biometrics for eHealth combining acoustic and machine vision analysis of speech, lip movement and face: a case study**

Emmanouil G. Spanakis (Foundation for Research and Technology - Hellas, Institute of Computer Science, Greece)  
Dijana Petrovska-Delacrétaz (Institut National des Télécommunications, France)  
Claude Bauzou (IDEMIA, France)  
Iacob Crucianu (SIVICO, Romania)  
Aymen Mtibaa (Télécom SudParis, France)  
Mohamed Hmani (Télécom SudParis, France)  
Marcel Kockmann (Lumenvox, Germany)  
Christian Narr (Lumenvox, Germany)  
Elnar Hajiyev (Real Eyes, Hungary)  
Daniel Takacs (Real Eyes, Hungary)  
Vangelis Sakkalis (Foundation for Research and Technology (FORTH), Greece)  
Apostolos Karantanas (Medical School of Crete University Hospital, Greece)

**15:45**

**Identifying and classifying incidents related to health information technology in medical imaging as a basis for improvements in practice**

Md Shafiqur Rahman Jabin (University of South Australia, Australia)  
Farah Magrabi (Macquarie University, Australia)  
Peter Hibbert (Macquarie University, Australia)  
Tim Schultz (University of Adelaide, Australia)  
William Runciman (University of South Australia, Australia)

**16:00**

**A Local/Regional Based CAD System for Early Diagnosis of Alzheimer's Disease Using sMRI Scans**

Fatma El-Zahraa El-Gamal (Faculty of Computers and Information, Mansoura University, Mansoura, Egypt)  
Mohammed M. Elmogly (Faculty of Computers and Information & Mansoura University, Egypt)  
Ashraf Khalil (Abu Dhabi University, United Arab Emirates)  
Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)  
Hassan Soliman (Faculty of Computers and Information, Mansoura University, Egypt)  
Ahmed Atwan (Faculty of Computers and Information, Mansoura University, Egypt)  
Robert Keynton (University of Louisville, USA)  
Gregory Barnes (University of Louisville Autism Center, USA)  
Ayman Sabry El-Baz (University of Louisville, USA)

**16:15**

**Identifying and characterizing the 18 steps of medical imaging process workflow as a basis for targeting improvements in clinical practice**

Md Shafiqur Rahman Jabin (University of South Australia, Australia)  
Catherine Mandel (Swinburne University of Technology, Australia)  
Tim Schultz (University of Adelaide, Australia)  
Peter Hibbert (Macquarie University, Australia)  
Farah Magrabi (Macquarie University, Australia)  
William Runciman (University of South Australia, Australia)

**Tutorial - Machine Learning in Medicine – Part 1 – Sponsored by ADNOC**

Room: *Um LULU - Capital Suite O6*  
Dr. Ayman El-Baz

**16:30 - 17:00**

**Coffee Break**

*Room: Capital Suite 5*

**17:00 - 18:15**

**Remote Sensing, Ladars and Lidars**

*Room: Marban - Capital Suite 4*

*Chairs: Reem Salim (Abu Dhabi University)*

*Vladimir Vityazev (Ryazan State Radio Engineering University, Russia)*

*Rui Fan (The Hong Kong University of Science and Technology, China)*

**17:00**

**Resolution Improvement in Ground-Mapping Car-Borne Radar Imaging Systems**

Sergey Vityazev (Ryazan State Radio Engineering University, Russia)  
Denis Valuyskiy (Ryazan State Radio Engineering University, Russia)  
Vladimir Vityazev (Ryazan State Radio Engineering University, Russia)

**17:15**

**Real-Time, Environmentally-Robust 3D LiDAR Localization**

Yilong Zhu (HKUST, Hong Kong)

Bohuan Xue (The Hong Kong University of Science and Technology, China)

Linwei Zheng (The Hong Kong University of Science and Technology, China)

Huaiyang Huang (The Hong Kong University of Science and Technology, China)

Ming Liu (The Hong Kong University of Science and Technology, China)

Rui Fan (The Hong Kong University of Science and Technology, China)

**17:30**

**Low-Cost GPS-Aided LiDAR State Estimation and Map Building**

Linwei Zheng (The Hong Kong University of Science and Technology, China)

Yilong Zhu (HKUST, Hong Kong)

Bohuan Xue (The Hong Kong University of Science and Technology, China)

Ming Liu (The Hong Kong University of Science and Technology, China)

Rui Fan (The Hong Kong University of Science and Technology, China)

**17:45**

**Evaluation of Oversampling Strategies in Machine Learning for Space Debris Detection**

Mahmoud Khalil (Khalifa University, United Arab Emirates)

Elena Fantino (Space Studies Institute of Catalonia, Spain)

Panos Liatsis (Khalifa University, United Arab Emirates)

**18:00**

**A Multi-frequency WMS Method for Tunable Diode Laser Absorption Spectroscopy Tomography**

Ang Huang (Beihang University, China)

Zhang Cao (Beihang University, China)

Wenshuai Zhao (Beihang University, China)

Lijun Xu (Beihang University, China)

**17:00 – 18:15**

**Deep Learning in Medicine**

*Room: Thamama - Capital Suite 7*

*Chairs: Ayman Sabry El-Baz (University of Louisville, USA)*

*Christoph Busch (NTNU - Gjøvik, Norway)*

**17:00**

**Automatic Segmentation and Functional Assessment of the Left Ventricle using U-net Fully Convolutional Network**

Hisham Abdeltawab (University of Louisville, USA)

Fahmi Khalifa (University of Louisville, USA)

Fatma Taher (Dubai, UAE & Zayed University, United Arab Emirates)

Garth Beach (University of Louisville, USA)

Tamer Mohamed (University of Louisville, USA)

Adel S Elmaghraby (University of Louisville, USA)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Robert Keynton (University of Louisville, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

**17:15**

**Cross-Spectral Periocular Recognition by Cascaded Spectral Image Transformation**

Kiran B. Raja (Norwegian University of Science and Technology (NTNU), Norway)  
Naser Damer (Fraunhofer Institute for Computer Graphics Research (IGD), Germany)  
Fadi Boutros (Fraunhofer Institute for Computer Graphics Research (IGD), Germany)  
Raghavendra Ramachandra (Norwegian University of Science and Technology (NTNU), Norway)  
Christoph Busch (NTNU - Gjøvik, Norway)

**17:30**

**Deep-Learning Based Method for Computer Aided Diagnosis of Diabetic Retinopathy**

Omar Dekhil (CECS, USA)  
Ahmed Naglah (University of Louisville, USA)  
Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)  
Fatma Taher (Dubai, UAE & Zayed University, United Arab Emirates)  
Mohamed Shaban (Southern Arkansas University, USA)  
Ayman El-Baz (UofL, USA)

**17:45**

**A Deep Learning based Approach for Grading of Diabetic Retinopathy using Large Fundus image Dataset**

Ayesha Mehboob (College of Electrical and Mechanical Engineering & NUST, Pakistan)

**Tutorial - Machine Learning in Medicine – Part 2 – Sponsored by ADNOC**

Room: *Um LULU - Capital Suite O6*  
Dr. Ayman El-Baz

**18:30 - 20:30**

**Dinner at the ADNEC**

*Room: Capital Suite 5*

# Monday, December 9<sup>th</sup>

## INTERNATIONAL SCHOOL OF IMAGING (ISI) PANEL DISCUSSION

**8:45 - 9:30**

**Dr. Kostas Marias, FORTH, Greece**

*Room: Marban - Capital Suite 4*

**9:30 - 10:30**

**Pattern Recognition and Feature Extraction**

*Room: Marban - Capital Suite 4*

Chairs: Mohammed Ghazal (Abu Dhabi University)

Montasir Qasymeh (Abu Dhabi University)

**9:30**

**Anomaly Detection Combining Discriminative and Generative Models**

Kyota Higa (NEC Corporation, Japan)

Hideaki Sato (NEC Corporation, Japan)

Soma Shiraishi (NEC Corporation, Japan)

Katsumi Kikuchi (NEC Corporation, Japan)

Kota Iwamoto (NEC Corporation, Japan)

**9:45**

**Multi-spectral Imaging To Detect Artificial Ripening Of Banana: A Comprehensive Empirical Study**

Narayan Vetrekar (Goa University, India)

Raghavendra Ramachandra (Norwegian University of Science and Technology (NTNU), Norway)

Kiran B. Raja (Norwegian University of Science and Technology (NTNU), Norway)

Rajendra Soiru Gad (SPO GU Taleigao Plateau & Goa University, India)

**10:00**

**Identifying Asthma genetic signature patterns by mining Gene Expression BIG Datasets using Image Filtering Algorithms**

Mahmood Hachim (University of Sharjah, United Arab Emirates)

Rifat Hamoudi, (University of Sharjah, United Arab Emirates)

Bassam Mahboub (University of Sharjah, United Arab Emirates)

Qutayba Hamid (University of Sharjah, United Arab Emirates)

**10:15**

**AGR-FCN: Adversarial Generated Region based on Fully Convolutional Networks for Single- and Multiple-Instance Object Detection**

Rui Wang (Beihang University, China)

Runnan Qin (Beihang University, China)

Jialing Zou (Beihang University, China)

Liang Zhang (University of Connecticut, China)

**9:30 – 10:30**

**Novel Tomographic Imaging Techniques**

*Room: Thamama - Capital Suite 7*

*Chairs: Anas Altarabsheh (Abu Dhabi University)*

*Maomao Zhang (Shenzhen Leengstar Co. Ltd., China)*

*Marco Jose Da Silva (Universidade Tecnológica Federal do Paraná, Brazil)*

**9:30**

**Big data driven U-Net based electrical capacitance image reconstruction algorithm**

Yi Li (Tsinghua University, China)

Xinmeng Yang (Tsinghua University, China)

Chaojie Zhao (Tsinghua University, China)

Bing Chen (CNPC Beijing Richfit Information Technology Co. Ltd, China)

Maomao Zhang (Shenzhen Leengstar Co. Ltd., China)

**9:45**

**Non-invasive Discrimination of Colorectal Adenomas and Non-Neoplastic Polyps with Micro-Optical Coherence Tomography Imaging**

Yu Xiaojun (Northwestern Polytechnical University, China)

Xingduo Wang (Northwestern Polytechnical University, China)

Nan Li (Northwestern Polytechnical University, China)

Qianshan Ding (Northwest University, China)

Linbo Liu (Nanyang Technological University, Singapore)

Ting Yang (Northwestern Polytechnical University, China)

**10:00**

**High-speed Three-Dimensional Glioma Morphology Imaging and Grade Discrimination using Micro-Optical Coherence Tomography**

Yu Xiaojun (Northwestern Polytechnical University, China)

Xingduo Wang (Northwestern Polytechnical University, China)

Chi HU (Northwestern Polytechnical University, China)

Shiqi Fan (Northwestern Polytechnical University, China)

Linbo Liu (Nanyang Technological University, Singapore)

Yong Guo (Northwestern Polytechnical University, China)

**10:15**

**GPU-accelerated Simulator for Optical Tomography applied to Two-Phase Flows**

Rafael S. Bernardelli (Universidade Tecnológica Federal do Paraná, Brazil)

Eduardo N. Santos (Universidade Tecnológica Federal do Paraná, Brazil)

Rigoberto Morales (UTFPR, Brazil)

Daniel Rodrigues Pipa (Universidade Tecnológica Federal do Paraná, Brazil)

Marco Jose Da Silva (Universidade Tecnológica Federal do Paraná, Brazil)

**10:30 - 11:00**

**Coffee Break**

*Room: Capital Suite 5*



**11:00 - 12:00**

**Machine Learning Approaches in Imaging**

*Room: Marban - Capital Suite 4*

*Chairs: Reem Salim (Abu Dhabi University)*

*Kostas Marias (FORTH, Greece)*

*Anandh Kilpattu Ramaniharan (UAB School of Medicine, University of Alabama, Birmingham, USA)*

**11:00**

**Machine Learning Classification of Neuropsychiatric Systemic Lupus Erythematosus patients using resting-state fMRI functional connectivity**

Nicholas J. Simos (TUC, Greece)

Georgios C. Manikis (Foundation for Research and Technology, Greece)

Efrosini Papadaki (University of Crete, Greece)

Eleftherios Kavroulakis (University of Crete, Greece)

Giorgos Bertias (University of Crete, Greece)

Kostas Marias (FORTH, Greece)

**11:15**

**Super-Resolution Spike Event-based Polarimetric Dynamic Vision Sensor p(DVS) Cognitive Imaging**

Anthony Beninati (Manhattan College, USA)

Martin Nowak (Manhattan College, USA)

Nicolas Douard (Manhattan College, USA)

Joe Lanzi (Manhattan College, USA)

Ridwan Hussain ((The Bronx High School of Science, USA)

Yi Wang (Manhattan College, USA)

Suman Shrestha (Manhattan College, USA)

Zoe Giakos (Florida International University)

George C. Giakos (Manhattan College, USA)

**11:30**

**Identifying Patterns of Breast Cancer Genetic Signatures using Unsupervised Machine Learning**

Rifat Hamoudi (University of Sharjah, United Arab Emirates)

Meriem Bettayeb (University of Sharjah, United Arab Emirates)

Areej Alsaafin (University of Sharjah, United Arab Emirates)

Mahmood Hachim (University of Sharjah, United Arab Emirates)

Qassim MH Nasir (University Of Sharjah, United Arab Emirates)

Ali Bou Nassif (University of Sharjah, United Arab Emirates)

**11:45**

**Extraction of Radiomic Features from Breast DCE-MRI Responds to Pathological Changes in Patients During Neoadjuvant Chemotherapy Treatment**

Priscilla Dinkar Moyya (Vellore Institute of Technology, India)

Asaithambi Mythili (Vellore Institute of Technology, Vellore, India)

Anandh Kilpattu Ramaniharan (UAB School of Medicine, University of Alabama, Birmingham, USA)

**11:00 – 12:00**

**Data Mining in Imaging**

Room: *Thamama - Capital Suite 7*

Chairs: Abdulla Alqemzi (ADNOC)

Nikolaos Vidakis (Hellenic Mediterranean University, Greece)

**11:00**

**Identifying and characterizing system issues of health information technology in medical imaging as a basis for recommendations**

Md Shafiqur Rahman Jabin (University of South Australia, Australia)

Farah Magrabi (Macquarie University, Australia)

Peter Hibbert (Macquarie University, Australia)

Tim Schultz (University of Adelaide, Australia)

Taryn Bessen (South Australia Medical Imaging, Australia)

William Runciman (University of South Australia, Australia)

**11:15**

**Computer-Aided Diagnosis of Acute Myocardial Infarction using Time-Dependent Plasma Metabolites**

Ahmed Naglah (University of Louisville, USA)

Fahmi Khalifa (University of Louisville, USA)

Narayana Singam (University of Louisville, USA)

Bahjat Aladili (University of Louisville, USA)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Guruprasad Giridharan (University of Louisville, USA)

Ashraf Khalil (Abu Dhabi University, United Arab Emirates)

Adel S Elmaghraby (University of Louisville, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

Andrew DeFilippis (University of Louisville, USA)

**11:30**

**Pollen Grain Classification using Geometrical and Textural Features**

Georgios C. Manikis (Foundation for Research and Technology, Greece)

Kostas Marias (Foundation for Research and Technology AND Hellenic Mediterranean University)

Eleftherios Alissandrakis (Hellenic Mediterranean University, Greece)

Louis Perrotto (Department of Telecommunications, Enseirb-Matmecca)

Elisavet Savvidaki (Hellenic Mediterranean University, Greece)

Nikolaos Vidakis (Hellenic Mediterranean University, Greece)

**11:45**

**Retinal Layers OCT Scans 3-D Segmentation**

Ahmed A Sleman (University of Louisville, USA)

Ahmed Soliman (University of Louisville, USA)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Harpal Sandhu (UofL, USA)

Shlomit Schaal (University of Massachusetts Medical School, USA)

Adel S Elmaghraby (University of Louisville, USA)

Ayman El-Baz (UofL, USA)

**12:00 - 13:00**

**Novel Imaging Systems**

*Room: Marban - Capital Suite 4*

*Chairs: Montasir Qasymeh (Abu Dhabi University)*

*Stelios Sfakianakis (FORTH, Greece)*

*Ioannis Pitas (Aristotle University of Thessaloniki, Greece)*

**12:00**

**A Robust Pavement Mapping System Based on Normal-Constrained Stereo Visual Odometry**

Huaiyang Huang (the Hong Kong University of Science and Technology, China)

Rui Fan (The Hong Kong University of Science and Technology, China)

Yilong Zhu (HKUST, China)

Ming Liu (The Hong Kong University of Science and Technology, China)

Ioannis Pitas (Aristotle University of Thessaloniki, Greece)

**12:15**

**A Parallel Binocular System for 3D Pose Measurement by a Single PTZ Camera**

Rui Wang, Ran Huang and Zimin Li (Beihang University, China)

**12:30**

**Towards an unobtrusive baby monitoring system for real-time detection of possibly hazardous situations**

Vangelis Sakkalis (Foundation for Research and Technology (FORTH), Greece)

Matthew Pediaditis and Stelios Sfakianakis (FORTH, Greece)

**12:45**

**Real-Time Embedded System for Hole Detection in Fish Cage Nets**

Nikolaos Badogiannis (Electrical & Computer Engineer, Greece)

Konstantia Moirogiorgou, Michalis Zervakis and Apostolos Dollas (Technical University of Crete, Greece)

Nikos Papandroulakis (Hellenic Centre for Marine Research, Greece)

**12:00 – 13:00**

**Electrical Tomographic Imaging Systems**

*Room: Thamama - Capital Suite 7*

*Chairs: Wael Elmedany (University of Bahrain)*

*Shui Liu (Graduate School at Shenzhen, Tsinghua University, China)*

**12:00**

**Design and optimization of liquid level sensor based on electrical tomography**

Yi Li and Jingdai Cheng (Tsinghua University, China)

Shui Liu (Graduate School at Shenzhen, Tsinghua University, China)

**12:15**

**A CNN-Based Image Reconstruction for Electrical Capacitance Tomography**

Jin Zheng, Haocheng Ma and Lihui Peng (Tsinghua University, China)

**12:30**

**Simulation of Flooding Phenomenon in Packed Column using Electrical Capacitance Tomography**

Yuan Chen, Yunjie Yang, Jiabin Jia, Chang Liu and Mathieu Lucquiaud (University of Edinburgh, United Kingdom (Great Britain))

Zhigang Li (China University of Petroleum, China)

**12:45**

**A neural network-based local decomposition approach for image reconstruction in Electrical Impedance Tomography**

Zainab Husain and Panos Liatsis (Khalifa University, United Arab Emirates)

**13:00 - 14:00**

**Lunch Break**

*Room: Capital Suite 5*

**14:00 - 15:00**

**Applications of Medical Image Processing and Techniques**

*Room: Marban - Capital Suite 4*

Chairs: Luay Fraiwan (Abu Dhabi University)

Surendra Rawat (University of Sharjah, United Arab Emirates)

Meng Zhou (Beihang University, China)

**14:00**

**Diabetic Retinopathy Grading Using 3D Multi-path Convolutional Neural Network Based on Fusing Features from OCTA Scans, Demographic, and Clinical Biomarkers**

Nabila Eladawi (Faculty of Computers and Information, Mansoura University, Egypt)

Mohammed M. Elmogy (Faculty of Computers and Information & Mansoura University, Egypt)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Ahmed Aboufotouh (Mansoura University, Egypt)

Alaa Riad (Faculty of Computers and Information, Mansoura University, Egypt)

Harpal Sandhu (UofL, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

**14:15**

**Ultrasound Nerve Segmentation of Brachial Plexus Based on Optimized ResU-Net**

Rui Wang, Hui Shen and Meng Zhou (Beihang University, China)

**14:30**

**A CAD System For The Early Prediction Of Hypertension Based On Changes In Cerebral Vasculature**

Heba Kandil and Ahmed Soliman (University of Louisville, USA)

Fatma Taher (Dubai, UAE & Zayed University, United Arab Emirates)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Mohiuddin Hadi and Guruprasad Giridharan (University of Louisville, USA)

Ayman El-Baz (UofL, USA)

**14:45**

**Semi-automated Image Analysis Methodology to Investigate Intracellular Heterogeneity in Immunohistochemical Stained Sections**

Rifat Hamoudi, Sarah Hammoudeh, Arabella Hammoudeh and Surendra Rawat (University of Sharjah, United Arab Emirates)

**14:00 – 15:00**

**Exploratory Imaging Systems**

*Room: Thamama - Capital Suite 7*

Chairs: Huma Zia (Abu Dhabi University)

Shijie Sun (Beihang University, China)

Kun Fang (Ningbo Fotile Kitchen Ware Co., Ltd., China)

**14:00**

**Baking Status Characterization of Baked Food Image Based on Superpixel Segmentation**

Conghui Wang (Northwestern Polytechnical University, China)

Bochuan Hou (Beijing University of Posts and Telecommunications, China)

Jing Shi, Jianhua Yang and Boning Wu (Northwestern Polytechnical University, China)

Zixing Fu and Kun Fang (Ningbo Fotile Kitchen Ware Co., Ltd., China)

**14:15**

**Vision Based Liquid Level Detection and Bubble Area Segmentation in Liquor Distillation**

Haocheng Ma and Lihui Peng (Tsinghua University, China)

**14:30**

**Improving image reconstruction in electrical capacitance tomography based on deep learning**

Hai Zhu, Jiangtao Sun, Lijun Xu and Shijie Sun (Beihang University, China)

**14:45**

**Design and Testing of a Square Helmholtz Coil for NMR Applications with Relative Improved B1 Homogeneity**

Sidi Mohamed Ahmed Ghaly and Khalid AlMuhanna (Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia)

Mohammad Obaidullah Khan (Al Imam Mohammad Ibn Saud Islamic University, KSA, India)

**15:00 - 16:00**

**Emerging Imaging Trends**

*Room: Marban - Capital Suite 4*

Chairs: Adel Khelifi (Abu Dhabi University)

Michalis Zervakis (Technical University of Crete, Greece)

**15:00**

**A Free Element Spherical and Ellipsoidal Radiofrequency Coils with High B1 Homogeneity for MRI**

Sidi Mohamed Ahmed Ghaly (Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia)

Mohammad Obaidullah Khan (Al Imam Mohammad Ibn Saud Islamic University, KSA, India)

Khalid AlMuhanna (Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia)

Khalid Al-Snaie (College of Technology, Saudi Arabia)

**15:15**

**Millimeter Wave Imaging of Surface Defects and Corrosion under Paint using V-band Reflectometer**

Mohammed Saif ur Rahman (Khalifa University-The Petroleum Institute, United Arab Emirates)

Mohamed A Abou-Khousa (Khalifa University of Science and Technology & Petroleum Institute, United Arab Emirates)

**15:30**

**An Efficient Human Activity Recognition Framework Based on Wearable IMU Wrist Sensors**

Ahmad Ayman (Arab Academy for Science, Technology, and Maritime Transport, Egypt)  
Omneya Attallah (Post Dr & Arab Academy for Science and Technology and Maritime Transport, Egypt)

Heba A. Shaban (Arab Academy for Science, Technology & Maritime Transport, Egypt)

**15:45**

**A Multi-collective, IoT-enabled, Adaptive Smart Farming Architecture**

Giorgos Kakamoukas (UOWM, Greece)

Panagiotis Sarigiannidis (University of Western Macedonia, Greece)

Michalis Zervakis and George Livanos (Technical University of Crete, Greece)

Dimitris Ramnalis and Vassilis Polychronos (Geosense, Greece)

Thomai Karamitsou (Agrosense, Greece)

Athanasios Folinas (Grevena Association of Farmers, Greece)

Nikos Tsitsiokas (ASEPOP, Greece)

**15:00 - 16:00**

**Quantitative Imaging Methods and Techniques**

*Room: Thamama - Capital Suite 7*

Chairs: Mohammed Ghazal (Abu Dhabi University)

Wafaa Shalash (King Abdul Aziz University, Saudi Arabia)

Manish Bajpai (IIITDM Jabalpur, India)

**15:00**

**Driver Fatigue Detection with Single EEG Channel Using Transfer Learning**

Wafaa Shalash (King Abdul Aziz University, Saudi Arabia)

**15:15**

**Fractional Order Savitzky-Golay Differentiator based Approach for Mammogram Enhancement**

Koushendra Kumar Singh (NIT Jamshedpur, India)

Manish Bajpai (IIITDM Jabalpur, India)

**15:30**

**An Accurate System for Prostate Cancer Localization from Diffusion-Weighted MRI**

Islam R. Abdelmaksoud (Mansoura University, Egypt)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Ahmed Shalaby (University of Louisville, USA)

Mohammed M. Elmogy (Faculty of Computers and Information & Mansoura University, Egypt)

Ahmed Aboufotouh (Mansoura University, Egypt)

Mohamed Abu El-Ghar (Urology and Nephrology Center, University of Mansoura, USA)

Robert Keynton (University of Louisville, USA)

Ayman ElBaz (University of Louisville, United Arab Emirates)

**15:45**

**A CNN-Based Framework for Automatic Vitreous Segmentation from OCT Images**

El Sayed Hussein Haggag (Mansoura University, Egypt)

Fahmi Khalifa (University of Louisville, USA)

Hisham Abdeltawab (University of Louisville, USA)

Ahmed Elnakib (University of Mansoura, Egypt)

Mohamed Mohamed (--Mansoura Uiversity, Egypt)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Harpal Sandhu (UofL, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

**16:00 - 16:30**

**Coffee Break**

*Room: Capital Suite 5*

**16:30 - 17:30**

**Real Life Imaging Applications and Challenges**

*Room: Marban - Capital Suite 4*

Chairs: Chairs: ElFadl Ibrahim (ADNOC)

Jiangtao Sun (Beihang University, China)

Yi Li (Tsinghua University, China)

**16:30**

**Effect of stimulation patterns on bladder volume measurement based on fringe effect of EIT sensors**

Xiaofeng Liang (Beihang University, China)

Lijun Xu (Beihang University, China)

Wenbin Tian (Beihang University, China)

Yuedong Xie (Beihang University, China)

Jiangtao Sun (Beihang University, China)

**16:45**

**Imaging of flow pattern of gas-oil flows with convolutional neural network**

Zhuoqun Xu (Tsinghua University, China)

Xinmeng Yang (Tsinghua University, China)

Bing Chen (CNPC Beijing Richfit Information Technology Co. Ltd, China)

Maomao Zhang (Shenzhen Leengstar Co. Ltd., China)

Yi Li (Tsinghua University, China)

**17:00**

**Classification System with Capability to Reject Unknowns**

Soma Shiraishi (NEC Corporation, Japan)

Katsumi Kikuchi (NEC Corporation, Japan)

Kota Iwamoto (NEC Corporation, Japan)

**17:15**

**Identifying clusters and themes from incidents related to health information technology in medical imaging as a basis for improvements in practice**

Md Shafiqur Rahman Jabin (University of South Australia, Australia)

Farah Magrabi (Macquarie University, Australia)

Peter Hibbert (Macquarie University, Australia)

Tim Schultz (University of Adelaide, Australia)

William Runciman (University of South Australia, Australia)

**17:30 PM**

Application of Imaging in the Oil and Gas Industry

Abdulla Alqemzi (ADNOC) and ElFadl Ibrahim (ADNOC)

**16:30 – 17:30**

**Medical Diagnostic Techniques**

*Room: Thamama - Capital Suite 7*

Chairs: Diwei Zhou (Loughborough University, United Kingdom (Great Britain))

Ayman ElBaz (University of Louisville, United Arab Emirates)

**16:30**

**Autism Spectrum Disorder Diagnosis framework using Diffusion Tensor Imaging**

Yaser A ElNakieb (University of Louisville, USA)

Ahmed Soliman (University of Louisville, USA)

Ali Mahmoud (University of Louisville, USA)

Ahmed Shalaby (University of Louisville, USA)

Omar Dekhil (CECS, USA)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Ashraf Khalil (University of Abu Dhabi, United Arab Emirates)

Andy Switala (University of Louisville, USA)

Robert Keynton (University of Louisville, USA)

Gregory Barnes (University of Louisville Autism Center, USA)

Ayman ElBaz (University of Louisville, United Arab Emirates)

**16:45**

**Brain Fibre Tracking Improved by Diffusion Tensor Similarity using Non-Euclidean Distances**

Lei Ye (Loughborough University, United Kingdom (Great Britain))

Eugenie Hunsicker (Loughborough University, United Kingdom (Great Britain))

Baihua Li (Loughborough University, United Kingdom (Great Britain))

Diwei Zhou (Loughborough University, United Kingdom (Great Britain))

**17:00**

**Chronic Wound Healing Assessment System Based on Color and Texture Analysis**

Mohammed M. Elmogly (Faculty of Computers and Information & Mansoura University, Egypt)

Ashraf Khalil (Abu Dhabi University, United Arab Emirates)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Ayman ElBaz (University of Louisville, United Arab Emirates)

**17:15**

**A Machine Learning Approach for Grading Autism Severity Levels Using Task-based Functional MRI**

Reem Haweel (Faculty of Computers and Information Sciences, Ain Shams University & University of Louisville, Egypt)

Omar Dekhil (CECS, USA)

Ahmed Shalaby (University of Louisville, USA)

Ali Mahmoud (University of Louisville, USA)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Robert Keynton (UoFL, USA)

Gregory Barnes (University of Louisville Autism Center, USA)

Ayman ElBaz (University of Louisville, United Arab Emirates)



**17:30 - 18:30**

**Image Analysis and Processing**

*Room: Marban - Capital Suite 4*

Chairs: Luay Fraiwan (Abu Dhabi University)

Ming Liu (The Hong Kong University of Science and Technology, Hong Kong),  
Haogang Zhu (Beihang University, China)

**17:30**

**A Deep Learning-Based Approach for Accurate Segmentation of Bladder Wall using MR Images**

Kamal Hammouda (University of Louisville, USA)

Fahmi Khalifa (University of Louisville, USA)

Ahmed Soliman (University of Louisville, USA)

Mohammed Ghazal (Abu Dhabi University, United Arab Emirates)

Mohamed Abou El-Ghar (Urology and Nephrology Center, University of Mansoura, USA)

Ahmed Haddad (University of Louisville, USA)

Mohammed M. Elmoqy (Faculty of Computers and Information & Mansoura University, Egypt)

Hanan Darwish (Mansoura University, Egypt)

Robert Keynton (University of Louisville, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

**17:45**

**PT-ResNet: Perspective Transformation-Based Residual Network for Semantic Road Image Segmentation**

Rui Fan (The Hong Kong University of Science and Technology, Hong Kong)

Yuan Wang (the Hong Kong University of Science and Technology, Hong Kong)

Lei Qiao (Shanghai Jiao Tong University, China)

Ruiwen Yao (Shanghai Jiao Tong University, China)

Peng Han (Shanghai Jiao Tong University, China)

Weidong Zhang (Shanghai Jiao Tong University, China)

Ioannis Pitas (Aristotle University of Thessaloniki, Greece)

Ming Liu (The Hong Kong University of Science and Technology, Hong Kong)

**18:00**

**A New System for Lung Cancer Diagnosis Based on The Integration of Global and Local CT Features**

Ahmed Shaffie (University of Louisville, USA)

Ahmed Soliman (University of Louisville, USA)

Hadil Abu Khalifeh (Abu Dhabi University, United Arab Emirates)

Fatma Taher (Dubai, UAE & Zayed University, United Arab Emirates)

Mohammed Ghazal (University of Abu Dhabi, United Arab Emirates)

Neal Dunlap (University of Louisville, USA)

Adel S Elmaghraby (University of Louisville, USA)

Robert Keynton (University of Louisville, USA)

Ayman Sabry El-Baz (University of Louisville, USA)

**18:15**

**Learning Adversarially Enhanced Heatmaps for Aorta Segmentation in CTA**

Wenji Wang (Beihang University, China)

Haogang Zhu (Beihang University, China)

**17:30 – 18:30**

**Imaging Devices and Techniques**

*Room: Thamama - Capital Suite 7*

Chairs: Huma Zia (Abu Dhabi University)

Lijun Xu (Beihang University, China)

Salah Al-Majeed (University of Gloucestershire, United Kingdom (Great Britain))

**17:30**

**Sliding Mode Control based Support Vector Machine RBF Kernel Parameter Optimization**

Maryam Yalsavar (Shiraz University, Iran)

Paknoosh Karimaghaee (Shiraz University, Iran)

Akbar Sheikh-Akbari (Leeds Beckett University, United Kingdom (Great Britain))

Jamshid Dehmeshki (Kingdon University, United Kingdom (Great Britain))

Mohammad-Hassan Khooban (Aarhus University, Denmark)

Salah Al-Majeed (University of Gloucestershire, United Kingdom (Great Britain))

**17:45**

**Automatic Calibration of Dual-LiDARs Using Two Poles Stickered with Retro-Reflective Tape**

Bohuan Xue (The Hong Kong University of Science and Technology, Hong Kong)

Jianhao Jiao (The Hong Kong University of Science and Technology, Hong Kong)

Yilong Zhu (HKUST, Hong Kong)

Linwei Zheng (The Hong Kong University of Science and Technology, Hong Kong)

Dong Han (University of Chinese Academy of Sciences, China)

Ming Liu (The Hong Kong University of Science and Technology, Hong Kong)

Rui Fan (The Hong Kong University of Science and Technology, Hong Kong)

**18:00**

**Autonomous UAV Landing System Based on Visual Navigation**

Zhixin Wu (Shanghai Jiao Tong University, China)

Peng Han (Shanghai Jiao Tong University, China)

Ruiwen Yao (Shanghai Jiao Tong University, China)

Lei Qiao (Shanghai Jiao Tong University, China)

Weidong Zhang (Shanghai Jiao Tong University, China)

Min Sun (Shanghai Jiao Tong University, China)

Tielong Shen (Sophia University & Japan, Japan)

Yilong Zhu (HKUST, Hong Kong)

Ming Liu (The Hong Kong University of Science and Technology, China)

Rui Fan (The Hong Kong University of Science and Technology, China)

**15:00-18:00 PM**

**Student Research Poster Session**

*Room: Um LULU - Capital Suite 6*

**19:30 - 22:30**

**Gala Dinner**

*Room: Aloft Abu Dhabi Hotel (Location of the Dinner: Brick)*

## Tuesday, December 10<sup>th</sup>

**8:00 - 9:00**

### **Advances in Imaging Technology**

Room: *Thamama - Capital Suite 7*

Chairs: *Anas Altarabsheh (Abu Dhabi University)*

*Yi Yang (Shenzhen LUSTER Vision Technology Co., Ltd., China)*

*Yunjie Yang (University of Edinburgh, United Kingdom (Great Britain))*

**8:00**

### **One-stage object detection networks for inspecting the surface defects of magnetic tiles**

Jiaqi Wei (Tsinghua University, China)

Peiyuan Zhu (Shenzhen HAN Industrial Technologies CO. LTD., China)

Xiang Qian (Tsinghua University, China)

Shidong Zhu (Tsinghua University, China)

**8:15**

### **Frequency-difference imaging for multi-frequency complex-valued ECT**

Haokun Wang (University of Edinburgh, United Kingdom (Great Britain))

Maomao Zhang (Shenzhen Leengstar Co. Ltd., China)

Yunjie Yang (University of Edinburgh, United Kingdom (Great Britain))

**8:30**

### **A Deconvolutional Bottom-up Deep Network for multi-person pose estimation**

Meng Li,

Haoqian Wang (Tsinghua University, China)

Yongbing Zhang (Tsinghua University, China)

Yi Yang (Shenzhen LUSTER Vision Technology Co., Ltd., China)

**8:45**

### **Renyi divergence and non-deterministic subsampling in Rigid Image Registration**

Constantinos Spanakis (Technical University of Crete & Foundation for Research and Technology-Hellas, Greece)

Emmanuel Mathioudakis (Technical University of Crete, Greece)

Nikos Kampanis (Foundation for Research and Technology, Greece)

Kostas Marias (Foundation for Research and Technology/ Hellenic Mediterranean University, Greece)

Nikos Tsiknakis (Foundation for Research and Technology - Hellas (FORTH), Greece)

**9:00 – 10:15**

### **Imaging Informatics and Artificial Intelligence**

Room: *Thamama - Capital Suite 7*

Chairs: *Wael Elmedany (University of Bahrain)*

*Chuanxin Xiao (North China Electric Power University, China)*

*Yoriko Kazama (Hitachi Asia, Singapore)*

**9:00**

### **Detecting knives-use by a deep learning method from surveillance videos**

ChunGuang Liu (Yangzhong Intelligent Electrical Institute, North China Electric Power University, China)

Peng Liu (North China Electric Power University, China)

Chuanxin Xiao (North China Electric Power University, China)

**9:15**

**Studies On a Video Surveillance System Designed for Deep Learning**

Chunfang Xue (Yangzhong Intelligent Electrical Institute, North China Electric Power University, China)

Peng Liu (North China Electric Power University, China)

Weiping Liu (North China Electric Power University, China)

**9:30**

**Classification of different vehicles in traffic using RGB and depth images: A Fast RCNN Approach**

Mohan Kashyap Pargi (Hitachi Asia Ltd, Singapore)

Bondan Setiawan (Hitachi Asia, Singapore)

Yoriko Kazama (Hitachi Asia, Singapore)

**9:45**

**Comparison of machine learning methods for multiphase flowrate prediction**

Zhenyu Jiang (University of Edinburgh, United Kingdom (Great Britain))

Haokun Wang (University of Edinburgh, United Kingdom (Great Britain))

Yunjie Yang (University of Edinburgh, United Kingdom (Great Britain))

Yi Li (Tsinghua University, China)

**10:00**

**Image reconstruction for electrical impedance tomography based on spatial invariant feature maps and convolutional neural network**

Delin Hu (University of Edinburgh, United Kingdom (Great Britain))

Keming Lu (Tsinghua University, China)

Yunjie Yang (University of Edinburgh, United Kingdom (Great Britain))

**10:15 – 11:15**

**Student Awards and Closing Ceremony**

*Room: Thamama - Capital Suite 7*

# IEEE Policies

## IEEE Code of Ethics

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1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Changes to the IEEE Code of Ethics will be made only after the following conditions are met:

- Proposed changes shall have been published in THE INSTITUTE at least three (3) months in advance of final consideration by the Board of Directors, with a request for comment, and
- All IEEE Major Boards shall have the opportunity to discuss proposed changes prior to final action by the Board of Directors, and
- An affirmative vote of two-thirds of the votes of the members of the Board of Directors present at the time of the vote, provided a quorum is present, shall be required for changes to be made.

## IEEE Code of Conduct

IST 2019 is committed to providing an inclusive and harassment-free environment in all interactions regardless of gender, sexual orientation, disability, physical appearance, race, or religion. This commitment extends to all IST 2019 sponsored events and services (webinars, committee meetings, networking functions, online forums, chat rooms, and social media) and any interaction regardless of affiliation or position. As a community that aims to share ideas and freedom of thought and expression, it is essential that the interaction between attendees take place in an environment that recognizes the inherent worth of every person by being respectful of all. IST 2019 does not tolerate harassment in any form. Harassment is any form of behavior intended to exclude, intimidate, or cause discomfort. Harassment includes, but is not limited to, the use of abusive or degrading language, intimidation, stalking, harassing photography or recording, inappropriate physical contact, and unwelcome sexual attention.

Anyone who experiences, observes, or has knowledge of threatening behavior is encouraged to immediately report the incident to the Conference Manager. All information shared will be kept confidential. In cases where a public response is deemed necessary, the identities of victims and reporters will remain confidential unless those individuals consent otherwise.

IST 2019 reserves the right to take appropriate action to foster an inclusive and respectful environment. Attendees violating these rules may be asked to leave the conference without a refund, at the sole discretion of the conference organizers. In addition, attendees are subject to the IEEE Code of Ethics.

Please contact the Conference Manager if you experience, observe, or have knowledge of behavior in violation of the Code of Conduct.

Please contact the Conference Manager with any questions about the Code of Conduct and Inclusivity & Diversity at IST 2019.

### **Event Conduct and Safety Statement**

IEEE believes that science, technology, and engineering are fundamental human activities, for which openness, international collaboration, and the free flow of talent and ideas are essential. Its meetings, conferences, and other events seek to enable engaging, thought provoking conversations that support IEEE's core mission of advancing technology for humanity. Accordingly, IEEE is committed to providing a safe, productive, and welcoming environment to all participants, including staff and vendors, at IEEE-related events.

IEEE has no tolerance for discrimination, harassment, or bullying in any form at IEEE-related events. All participants have the right to pursue shared interests without harassment or discrimination in an environment that supports diversity and inclusion.

Participants are expected to adhere to these principles and respect the rights of others. IEEE seeks to provide a secure environment at its events. Participants should report any behavior inconsistent with the principles outlined here, to on site staff, security or venue personnel, or to [eventconduct@ieee.org](mailto:eventconduct@ieee.org).

### **IEEE Non-discrimination Policy**

IEEE prohibits Discrimination, Harassment and Bullying against any person for any reason, for example, because of age, ancestry, color, disability or handicap, national origin, race, religion, gender, sexual or affectional orientation, gender identity, appearance, matriculation, political affiliation, marital status, veteran status or any other characteristic protected by law. IEEE employees, volunteers, members, and other constituents of the IEEE, when and wherever those individuals are conducting IEEE business or participating in IEEE events or activities, shall maintain an environment free of Discrimination, including Harassment, Bullying, and Retaliation. Discrimination or harassment of IST 2019 participants will not be condoned or tolerated in any form. Conference participants violating this rule may be sanctioned or expelled from the conference without a refund at the discretion of the conference committee.

See IEEE Policies, Section 9.26 - IEEE Policy Against Discrimination and Harassment (PDF, 45 KB) for the complete Policy.

### **IEEE Privacy Policy**

At IEEE, we respect your privacy. We want to ensure that you get the information, content, and experiences that matter most to you. IEEE is committed to protecting the privacy of its members, customers, volunteers, and other contacts. This privacy policy applies to all personal data processed by full-time and part-time employees, volunteers when acting on behalf of IEEE, contractors and partners doing business on behalf of IEEE, as well as all legal entities, all operating locations in all countries, and all business processes conducted by IEEE. For more information, please visit <https://www.ieee.org/security-privacy.html>