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## Message from the Chairperson

On behalf of the Technical and Local Committee of the IEEE International Conference on Imaging Systems and Techniques (IST 2016) and IEEE International School on Imaging, I welcome you to the beautiful island of Crete, Greece. Crete is an island of extremely high historical importance, well known as the main island where the Minoan civilization arose, during the Aegean Bronze Age, and flourished from approximately 3650 to 1400 BCE.

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 thirteenth 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, and Macau, China 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 Local Committee Chairs, Professors Michalis Zervakis (Technical University of Crete), Professor Konstantina (Nantia) Nikita (National Technical University of Athens), and Professor Antonios Gasteratos (Democritus University of Thrace) as well as the Honorary Chair, Professor Wuqiang Yang (University of Manchester) for the outstanding organization of the event; Professor Lijun Xu (Beihang University), Professor Mohd Zaid Abdullah (Universiti Sains Malaysia, Malaysia), Professor Jacob Scharcanski (UFRGS - Federal University of Rio Grande do Sul), Suman Shrestha (University of Massachusetts Medical School), Professor Matteo Pastorino (University of Genoa) and Professor Cesare Svelto (Polytechnic of Milan) for their remarkable efforts to enrich the quality of this event and its technical program, leading to a large number of high-quality submissions; I would also like to thank Dr. Selina Kolokytha (Swiss Federal Laboratories for Materials Science and Technology), Technical Coordinator of the IEEE International School of Imaging, for her meritorious contributing efforts to the functions and guidelines of the School, Professor Costas Balas (Technical University of Crete), George Livanos (Technical University of Crete), Tannaz Farrahi (University of Akron), Dr. Vangelis Sakkalis (FORTH), Thomas Cambria (Manhattan College), Cathryn Callahan, Michael Surovich (Manhattan College), and the Technical Committee Members for their significant contributions towards the dissemination of this event worldwide and promotion of high-quality and standards. Special thanks are extended to Brianna Orr and Chris Dyer, Conference Catalysts, LLC, Administrators of the IST and the School for their outstanding and dedicated 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 Chania, Crete, Greece, and find the 2016 IEEE International Conference on Imaging Systems and Techniques (IST2016) 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, IEEE Fellow  
General Chairman IEEE IST Conference  
Director, IEEE International School on Imaging  
United States

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### **Conference Management**

Conference Catalysts, LLC, USA

# International School of Imaging: Lecture Series

Tuesday, October 4

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**09:00 - 10:00**

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**Lecture 1: *Towards Standardization of X-ray Beam Filters for use in Digital Mammography and Digital Breast Tomosynthesis***

Ballroom A

*Suman Shrestha (University of Massachusetts, USA)*

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**Lecture 2: *Airport baggage screening: challenges and ideas***

Ballroom B

*Selina Kolokytha (Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

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**10:00 - 11:00**

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**Lecture 3: *New developments in hyperspectral technology add new dimensions in biomedical imaging and in Non-Destructive Testing***

Ballroom A

*Costas Balas (Technical University of Crete, Greece)*

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**Lecture 4: *TDLAS tomography and application in combustion flame monitoring***

Ballroom B

*Lijun Xu (Beihang University, China)*

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**11:20 - 12:20**

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**Lecture 5: *Bioinspired Unmanned Robotic Vision Systems: Technical Challenges, and Market Forecast***

Ballroom A

*George Giakos, Panagiotis Pachis, Lina Bengtson, Joseph B. Majeski & Michael Surovich (Manhattan College, USA)*

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**Lecture 6: *Cardiovascular Imaging Informatics***

Ballroom B

*Dimitrios I. Fotiadis (University of Ioannina/FORTH, Greece)*

**12:20 - 13:20**

**Lecture 7: *Potentialities of Microwave Imaging Techniques for Brain Stroke Detection***

Ballroom A

*Matteo Pastorino (University of Genoa, Italy)*

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**Lecture 8: *Integrating in vitro/in vivo experiments and imaging techniques with computational models to enhance personalized tumor growth predictions***

Ballroom B

*Vangelis Sakkalis, (FORTH, Greece)*

**Wednesday, October 5**

**14:30 - 15:30**

**Lecture 9: *Current status of industrial tomography***

Ballroom B

*Wuqiang Yang (University of Manchester, United Kingdom)*

**Thursday, October 6**

**08:10 - 09:00**

**Lecture 10: *Computational and image analysis challenges for assessing tumor environment with perfusion and diffusion MRI***

Ballroom A

*Konstantinos Marias, (FORTH, Greece)*

## Monday, October 3

**19:00 - 22:00**  
**Reception Dinner**

## Tuesday, October 4

**07:30 - 08:30**  
**Registration**

**08:30 - 08:40**

**Welcome Message from the General Chair**

*George Giakos, IST General Chairman; Manhattan College, USA*

**Room:** Ballroom A

**08:40 - 09:00**

**Welcome Message from the Local Chair**

*Mihalis Zervakis, Technical University of Crete (TUC), Greece*

**Room:** Ballroom A

**09:00 - 10:00**

**Room:** Ballroom A

**Lecture 1: Towards Standardization of X-ray Beam Filters for use in Digital Mammography and Digital Breast Tomosynthesis**

*Suman Shrestha, University of Massachusetts, USA*

**Room:** Ballroom B

**Lecture 2: Airport baggage screening: challenges and ideas**

*Selina Kolokytha, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*

**10:00 - 11:00**

**Room:** Ballroom A

**Lecture 3: New developments in hyperspectral technology add new dimensions in biomedical imaging and in Non-Destructive Testing**

*Costas Balas, Technical University of Crete, Greece*

**Room:** Ballroom B

**Lecture 4: TDLAS tomography and application in combustion flame monitoring**

*Lijun Xu, Beihang University, China*

**11:00 - 11:20**

**Coffee Break**



## Tuesday, October 4

11:20 - 12:20

Room: Ballroom A

**Lecture 5: Bioinspired Unmanned Robotic Vision Systems: Technical Challenges, and Market Forecast**

*George Giakos, Panagiotis Pachis, Lina Bengtson, Joseph B. Majeski & Michael Surovich, Manhattan College, USA*

Room: Ballroom B

**Lecture 6: Cardiovascular Imaging Informatics**

*Dimitrios I. Fotiadis, University of Ioannina/FORTH, Greece*

12:20 - 13:20

Room: Ballroom A

**Lecture 7: Potentialities of Microwave Imaging Techniques for Brain Stroke Detection**

*Matteo Pastorino, University of Genoa, Italy*

Room: Ballroom B

**Lecture 8: Integrating in vitro/in vivo experiments and imaging techniques with computational models to enhance personalized tumor growth predictions**

*Vangelis Sakkalis, FORTH, Greece*

13:20 - 14:30

Lunch

14:30 - 15:30

**Imaging Systems: New Design Concepts**

Room: Ballroom A

**Session Chair:** Suman Shrestha (University of Massachusetts Medical School, USA)

**14:30 A Novel Laboratory Design of a Passive-Imaging Target Recognition System Operating under Clutter**

*Thomas Cambria (Manhattan College, USA)*

*Kevin Lynch (Manhattan College, USA)*

*Romeo Pascone (Manhattan College, USA)*

*Brent Horine (Manhattan College, USA)*

*Suman Shrestha (University of Massachusetts Medical School, USA)*

*Tannaz Farrahi (University of Akron, USA)*

*George C Giakos (Manhattan College, USA)*

**14:45 Smart multispectral imager for industrial applications**

*Maik Rosenberger (Ilmenau University of Technology, Germany)*

*Rafael Celestre (Ilmenau University of Technology, Germany)*

**15:00 Real-time Implementation of Fractal Image Compression in Low Cost FPGA**

*Abdul-Malik Saad (Universiti Sains Malaysia, Malaysia)*

*Mohd Zaid Abdullah (Universiti Sains Malaysia, Malaysia)*

## Tuesday, October 4

**15:15 A New Symmetric Semi-parallel Electrical Impedance Tomography (EIT) System - I: The Design**

*Liwen Miao (Shanghai Jiao Tong University, P.R. China)*  
*Yixin Ma (Shanghai Jiao Tong University, P.R. China)*  
*Xiaofan Xiong (Shanghai Jiao Tong University, P.R. China)*  
*Xinyi Chen (Shanghai Jiao Tong University, P.R. China)*  
*Tao Han (Shanghai Jiao Tong University, P.R. China)*  
*Ping Cai (Shanghai Jiao Tong University, P.R. China)*  
*Peng Qin (Shanghai Jiao Tong University, P.R. China)*  
*Xiaojun Ji (Shanghai Jiao Tong University, P.R. China)*

**14:30 - 15:30**

**Image Analysis and Processing I**

**Room:** Ballroom B

**Session Chair:** Michalis Zervakis (Technical University of Crete, Greece)

**14:30 Comparative Analysis of Texture Descriptors for Classification**

*Masood Ahmed (National University of Sciences and Technology, Pakistan)*  
*Arslan Shaukat (National University of Sciences and Technology, Pakistan)*  
*Muhammad Usman Akram (National University of Sciences and Technology, Pakistan)*

**14:45 Context-Dependent Social Mapping**

*Konstantinos Charalampous (Democritus University of Thrace, Greece)*  
*Ioannis Kostavelis (Democritus University of Thrace, Greece)*  
*Antonios Gasteratos (Democritus University of Thrace, Greece)*

**15:00 Multi-image Encryption and Authentication with Sparse Constraints in Gyration Domain**

*Zhuhong Shao (Capital Normal University, P.R. China)*  
*Yuanyuan Shang (Capital Normal University, P.R. China)*  
*Xiaoyan Fu (Capital Normal University, P.R. China)*  
*Hui Ding (Capital Normal University, P.R. China)*  
*Xiuzhuang Zhou (Capital Normal University, P.R. China)*

**15:15 Motion Parameters Estimation Based on Improved Radon Transform for Blurred Star Image**

*Junnan Huang (Beihang University, P.R. China)*  
*Jie Jiang (Beihang University, P.R. China)*

**15:30 - 16:30**

**Advances in Imaging**

**Room:** Ballroom A

**Session Chair:** George Livanos (Technical University of Crete, Greece)

**15:30 Color standardization for the immunohistochemically stained tissue section images**

*Anna Korzynska (Nalecz IBBE PAS, Poland)*  
*Jakub Zak (Nalecz IBBE PAS, Poland)*  
*Lukasz Roszkowiak (Nalecz IBBE PAS, Poland)*  
*Dorota Pijanowska (Nalecz IBBE PAS, Poland)*  
*Tomasz Markiewicz (Warsaw University of Technology, Poland)*

## Tuesday, October 4

- 15:45 Recursive-Mode K-means Clustering for Self-organization of Dynamic Imaging Data**  
*Ioanna Vourlaki (Technical University of Crete, Greece)*  
*George Livanos (Technical University of Crete, Greece)*  
*Theodoros-Marios Giakoumakis (Technical University of Crete, Greece)*  
*Michalis Zervakis (Technical University of Crete, Greece)*  
*George Giakos (Manhattan College, USA)*  
*Costas Balas (Technical University of Crete, Greece)*
- 16:00 Acceleration of RANSAC Algorithm for Images with Affine Transformation**  
*John Vourvoulakis (Democritus University of Thrace, Greece)*  
*John Lygouras (Democritus University of Thrace, Greece)*  
*John Kalomiros (Technological Educational Institute of Central Macedonia, Greece)*
- 16:15 In-line Photoluminescence Imaging of Crystalline Silicon Solar Cells for Micro-Crack Detection**  
*Teow Wee Teo (Universiti Sains Malaysia, Malaysia)*  
*Mohd Zaid Abdullah (Universiti Sains Malaysia, Malaysia)*

**15:30 - 16:30**

**Special Session: Computer Vision Based Measurements I**

**Room:** Ballroom B

**Session Chair:** Jacob Scharcanski (UFRGS, Brazil)

- 15:30 Droplet Imaging Instrument: Metrology Instrument for Icing Condition Detection**  
*Staffan Rydblom (Mid Sweden University, Sweden)*  
*Benny Thörnberg (Mid Sweden University, Sweden)*
- 15:45 Evaluating tracking and prediction of tumor motion in a motion-compensating system for adaptive radiotherapy**  
*Troy Teo (University of Manitoba & CancerCare Manitoba, Canada)*  
*Kaiming Guo (University of Manitoba & CancerCare Manitoba, Canada)*  
*Neil Bruce (University of Manitoba, Canada)*  
*Nadia Alayoubi (University of Manitoba & CancerCare Manitoba, Canada)*  
*Philip Kawalec (CancerCare Manitoba, Canada)*  
*Stephen Pistorius (University of Manitoba & CancerCare Manitoba, Canada)*
- 16:00 Robotic Validation of Visual Odometry for Wireless Capsule Endoscopy**  
*Dimitris K Iakovidis (University of Thessaly, Greece)*  
*George Dimas (University of Thessaly, Greece)*  
*Gastone Ciuti (Sant'Anna School of Advanced Studies, Italy)*  
*Federico Bianchi (Sant'Anna School of Advanced Studies, Italy)*  
*Alexandros Karargyris (National Institutes of Health, USA)*  
*Anastasios Koulaouzidis (The Royal Infirmary of Edinburgh, United Kingdom)*  
*Ervin Toth (Skåne University Hospital, Sweden)*
- 16:15 Determination of Textile Parameters with Digital Image Processing**  
*Christian Indra (Johannes Kepler University, Austria)*  
*Bernhard G. Zagar (Johannes Kepler University, Austria)*

**16:30 - 16:45**

**Coffee Break**

## Tuesday, October 4

**16:45 - 18:00**

### **Remote Sensing, Ladars, Lidars**

**Room:** Ballroom A

**Session Chair:** Selina Kolokytha (EMPA, Switzerland)

- 16:45 Clay Mapping in Underground Potash Mines: An Initial Investigation into the Use of Corrected Intensity Terrestrial LiDAR Data**  
*Angus Errington (University of Saskatchewan, Canada)*  
*Brian Daku (University of Saskatchewan, Canada)*  
*Arnfinn Prugger (Potash Corporation of Saskatchewan Inc., Canada)*
- 17:00 A Markov Chain Model Based on Cameron's CTD Ship Detection Scheme**  
*Georgios Kouroupis (University of Patras, Greece)*  
*Vassilis Anastassopoulos (University of Patras, Greece)*
- 17:15 UAV-Based 3D Modelling of Disaster Scenes for Urban Search and Rescue**  
*Styliani Verykokou (Institute of Communication and Computer Systems, Greece)*  
*Anastasios Doulamis (Institute of Communication and Computer Systems, Greece)*  
*George Athanasiou (Institute of Communication and Computer Systems, Greece)*  
*Charalabos Ioannidis (Institute of Communication and Computer Systems, Greece)*  
*Angelos Amditis (Institute of Communication and Computer Systems, Greece)*
- 17:30 Quick Detecting LED Array From the Background for Image Sensor Communication**  
*Leilei Jiang (North China Electric Power University, P.R. China)*  
*Peng Liu (North China Electric Power University, P.R. China)*  
*Rongzhao Wu (North China Electric Power University, P.R. China)*  
*Jiang Liu (Waseda University, Japan)*
- 17:45 Adaptive Multispectral GPU Accelerated Architecture for Earth Observation Satellites**  
*Rebecca Davidson (University of Surrey, United Kingdom)*  
*Christopher Bridges (University of Surrey, United Kingdom)*

**16:45 - 18:00**

### **Special Session: Computer Vision Based Measurements II**

**Room:** Ballroom B

**Session Chair:** Jacob Scharcanski (UFRGS, Brazil)

- 16:45 Real-Time Pothole Detection on TMS320C6678 DSP**  
*Aliaksei Mikhailiuk (University of Bristol, United Kingdom)*  
*Naim Dahnoun (University of Bristol, United Kingdom)*
- 17:00 Depth Estimation in Still Images and Videos Using a Motionless Monocular Camera**  
*Sotirios Diamantas (Athens Information Technology, Greece)*  
*Stefanos Astaras (Athens Information Technology, Greece)*  
*Aristodemos Pnevmatikakis (Athens Information Technology, Greece)*

## Tuesday, October 4

- 17:15 A Measuring Method for 3-D Movement of Particles Using Single-Lens Dual-Camera System**  
*Minhua Jia (University of Shanghai for Science and Technology, P.R. China)*  
*Wu Zhou (University of Shanghai for Science and Technology, P.R. China)*  
*Na Jin (University of Shanghai for Science and Technology, P.R. China)*  
*Xiaoshu Cai (University of Shanghai for Science and Technology, P.R. China)*
- 17:30 Dense 3D Reconstruction From Two Spherical Images Via Optical Flow-based Equirectangular Epipolar Rectification**  
*Sarthak Pathak (The University of Tokyo, Japan)*  
*Alessandro Moro (The University of Tokyo, Japan)*  
*Atsushi Yamashita (The University of Tokyo, Japan)*  
*Hajime Asama (The University of Tokyo, Japan)*
- 17:45 Shape Reconstruction Using Fisheye and Projective Cameras**  
*Konstantina Kottari (University Of Thessaly, Greece)*  
*Konstantinos Delibasis (University Of Thessaly, Greece)*

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**19:30 - 22:30**

**Gala Dinner**

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## Wednesday, October 5

**09:00 - 10:00**

### **Electromagnetic Imaging, Systems and Techniques**

**Room:** Ballroom A

**Session Chair:** Michalis Zervakis (Technical University of Crete, Greece)

- 09:00     Microwave Staring Correlated Imaging Method Based on Random Frequency Modulation with Varying Rates**  
*Yuanyue Guo (University of Science and Technology of China, P.R. China)*  
*Dongjin Wang (University of Science and Technology of China, P.R. China)*  
*Jie Deng (University of Science and Technology of China, P.R. China)*
- 09:15     Improving the Detection of mTBI Via Complexity Analysis in Resting - State Magnetoencephalography**  
*Marios Antonakakis (Technical University of Greece, Greece)*  
*Stavros I Dimitriadis (Cardiff University, United Kingdom & Aristotle University, Greece)*  
*Andrew Papanicolaou (University of Tennessee Health Science Center, USA)*  
*George Zouridakis (University of Houston, USA)*  
*Michalis Zervakis (Technical University of Crete, Greece)*
- 09:30     Near-Field Microwave Imaging Using Open-Ended Circular Waveguides**  
*Mohammad Ramzi (The Petroleum Institute, United Arab Emirates (UAE))*  
*Iman Prayudi (The Petroleum Institute, United Arab Emirates (UAE))*  
*Mohamed Wahbah (The Petroleum Institute, United Arab Emirates (UAE))*  
*Mohamed A Abou-Khousa (The Petroleum Institute, United Arab Emirates (UAE))*
- 09:45     Comparison of Noise Removal Algorithms on Optical Coherence Tomography (OCT) Image**  
*Asim Shah (Bahria University, Pakistan)*  
*Muhammad Malik (CEME NUST, Pakistan)*  
*Muhammad Usman Akram (CEME NUST, Pakistan)*  
*Shafaat Ahmed Bazaz (Center for Advanced Studies in Engineering (CASE), Pakistan)*

**09:00 - 10:00**

### **Medical Diagnostics Techniques I**

**Room:** Ballroom B

**Session Chair:** Sevastianos Chatzistergos (National Technical University of Athens, Greece)

- 09:00     Low-Order Statistical Analysis of 1-D Diffuse Reflectance Signals from Cancer Cells using 2-D Scalogram Images**  
*Rafael Rodrigues (Manhattan College, USA)*  
*Suman Shrestha (University of Massachusetts Medical School, USA)*  
*Romeo Pascone (Manhattan College, USA)*  
*Kevin Lynch (Manhattan College, USA)*  
*Evriclea Voudouri-Maniati (Manhattan College, USA)*  
*George Livanos (Technical University of Crete, Greece)*  
*Michalis Zervakis (Technical University of Crete, Greece)*  
*Aditi Deshpande (The University of Akron, USA)*  
*Chaya Narayan (The University of Akron, USA)*  
*Ying Na (Hangzhou Dianzi University, P.R. China)*  
*George Giakos (Manhattan College, USA)*

## Wednesday, October 5

- 09:15 Local Curvature Analysis for Differentiating Glioblastoma Multiforme from Solitary Metastasis**  
*Alexandros Vamvakas (University of Patras, Greece)*  
*Ioannis Tsougos (University of Thessaly, Greece)*  
*Nikolaos Arikidis (University of Patras, Greece)*  
*Eftychia Kapsalaki (University of Thessaly, Greece)*  
*Ioannis Fezoulidis (University of Thessaly, Greece)*  
*Eleni Costaridou (University of Patras, Greece)*
- 09:30 Improving Hypoxia Map Estimation by Using Model-Free Classification Techniques in DCE-MRI Images**  
*Maria Venianaki (IMT School for Advanced Studies Lucca, Italy & Foundation for Research and Technology – Hellas (FORTH), Greece)*  
*Eleftherios Kontopodis (Foundation for Research and Technology – Hellas (FORTH), Greece)*  
*Katerina Nikiforaki (Foundation for Research and Technology – Hellas (FORTH), Greece)*  
*Eelco de Bree (Medical School of Crete University Hospital, Greece)*  
*Thomas Maris (Medical School of Crete University Hospital, Greece)*  
*Apostolos Karantanas (Medical School of Crete University Hospital, Greece)*  
*Ovidio Salvetti (Istituto di Scienza e Tecnologie dell'Informazione "Alessandro Faedo" CNR, Italy)*  
*Kostas Marias (Foundation for Research and Technology – Hellas (FORTH), Greece)*
- 09:45 Assessment of Interstitial Fluid Pressure in Solid Tumors via Image Processing of DCE-MRI**  
*Maya Dadiani (Sheba Medical Center, Israel)*  
*Nir Kahana (Sheba Medical Center, Israel)*  
*Bella Kaufman (Sheba Medical Center, Israel)*  
*Eli Konen (Sheba Medical Center, Israel)*  
*Miri Sklair-Levy (Sheba Medical Center, Israel)*  
*Arnaldo Mayer (Sheba Medical Center, Israel)*

**10:00 - 11:00**

### **Imaging Instrumentation Design and Techniques**

**Room:** Ballroom A

**Session Chair:** Costas Balas (Technical University of Crete, Greece)

- 10:00 Real-Time Stereo Vision Implementation on the Texas Instruments KeyStone II SoC**  
*Han Cui (University of Bristol, United Kingdom)*  
*Naim Dahnoun (University of Bristol, United Kingdom)*
- 10:15 A low cost wrist vein sensor for biometric authentication**  
*R Raghavendra (Norwegian University of Science and Technology, Norway)*  
*Christoph Busch (Norwegian University of Science and Technology, Norway)*
- 10:30 A High-Speed MWIR Uncooled Multi-Aperture Snapshot Spectral Imager for IR Surveillance and Monitoring**  
*Roi Méndez-Rial (Aimen, Spain)*  
*Álvaro Souto-López (Aimen, Spain)*  
*Jesús Rodríguez-García (Aimen, Spain)*  
*Jorge Rodríguez-Araújo (Aimen, Spain)*  
*Antón García-Díaz (Aimen, Spain)*

## Wednesday, October 5

- 10:45**    **A novel hyperspectral camera and analysis platform for the non-destructive material identification and mapping: an application in paintings by El Greco**  
*Costas Balas (Technical University of Crete & Holoptica PC, Greece)*  
*George Epitropou (Technical University of Crete, Greece)*  
*Athanasios Tsapras (Technical University of Crete, Greece)*  
*Nikos Hadjinicolaou (University of Crete & Institute for Mediterranean Studies, Greece)*

**10:00 - 11:00**

### **Image Analysis and Processing II**

**Room:** Ballroom B

**Session Chair:** Sotirios Diamantas (Athens Information Technology, Greece)

- 10:00**    **HD Number Plate Localization on the Zynq Heterogeneous SoC**  
*Ali Al-Zawqari (Qatar University, Qatar)*  
*Omar Hommos (Qatar University, Qatar)*  
*Abdulhadi Al-Qahtani (Qatar University, Qatar)*  
*Ali Farhat (Qatar University, Qatar)*  
*Faycal Bensaali (Qatar University, Qatar)*  
*Abbes Amira (Qatar University, Qatar)*  
*Xiaojun Zhai (University of Derby, United Kingdom)*
- 10:15**    **A hybrid multiple exposure image fusion approach for HDR image synthesis**  
*Ioannis Merianos (Democritus University of Thrace, Greece)*  
*Nikolaos Mitianoudis (Democritus University of Thrace, Greece)*
- 10:30**    **Cross-Spectrum Periocular Authentication for NIR and Visible Images Using Bank of Statistical Filters**  
*Kiran B. Raja (Gjøvik University College, Norway)*  
*R Raghavendra (Gjøvik University College, Norway)*  
*Christoph Busch (Gjøvik University College, Norway)*
- 10:45**    **Designing and Development of a Robotic Puzzle Solver Using Morphological Associative Memories**  
*Antonios Arvanitidis (Democritus University of Thrace, Greece)*  
*Savvas A Chatzichristofis (Democritus University of Thrace, Greece)*  
*Athanasios Kapoutsis (Democritus University of Thrace, Greece)*  
*Angelos Amanatiadis (Democritus University of Thrace, Greece)*  
*Yiannis Boutalis (Democritus University of Thrace, Greece)*

**11:00 - 11:20**

**Coffee Break**



## Wednesday, October 5

11:20 - 12:20

### Novel Computed Tomography Imaging Techniques

Room: Ballroom A

Session Chair: Andrzej Skalski (AGH University of Science and Technology, Poland)

#### 11:20 Kidney Tumor Segmentation and Detection on Computed Tomography Data

*Andrzej Skalski (AGH University of Science and Technology, Poland)*

*Jacek Jakubowski (Rydygier Memorial Hospital, Poland)*

*Tomasz Drewniak (Specialized Municipal Hospital G. Narutowicz, Poland)*

#### 11:35 Feature Selection for Automatic CT-based Prostate Segmentation

*Artur Kos (AGH University of Science and Technology, Poland)*

*Andrzej Skalski (AGH University of Science and Technology, Poland)*

*Tomasz P. Zielinski (AGH University of Science and Technology, Poland)*

*Diana Gomes (University of Porto, Portugal)*

*Vitor Sá (University of Porto, Portugal)*

*Piotr Kędzierawski (Holly Cross Cancer Center, Poland)*

*Tomasz Kuszewski (Holly Cross Cancer Center, Poland)*

#### 11:50 Creating a Reference Database of Cargo Inspection X-ray Images Using High Energy CT of Cargo Mock-ups

*Selina Kolokytha (EMPA. Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

*Alexander Flisch (EMPA. Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

*Thomas Lüthi (EMPA. Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

*Mathieu Plamondon (EMPA. Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

*Stefan Hartmann (EMPA. Swiss Federal Laboratories for Materials Science and Technology, Switzerland)*

*Wicher Visser (Center for Adaptive Security Research and Applications (CASRA), Switzerland)*

*Adrian Schwaninger (Center for Adaptive Security Research and Applications (CASRA), Switzerland)*

*Diana Hardmeier (Center for Adaptive Security Research and Applications (CASRA), Switzerland)*

*Marius Costin (CEA LIST, France)*

*Caroline Vienne (CEA LIST, France)*

*Frank Sukowski (Fraunhofer Institute for Integrated Circuits IIS, Germany)*

*Ulf Haßler (Fraunhofer Institute for Integrated Circuits IIS, Germany)*

*Irène Dorion (Smiths Heimann S.A.S (SH), France)*

*Andrea Cesare Canonica (Swiss Federal Customs Administration (FCA), Switzerland)*

*Eric Rochat (Swiss Federal Customs Administration (FCA), Switzerland)*

*Ger Koomen (Dutch Tax and Customs Administration, The Netherlands)*

*Micha Slegt (Dutch Tax and Customs Administration, The Netherlands)*

## Wednesday, October 5

### 12:05 Registration of different phases of contrast-enhanced CT for facilitation of partial nephrectomy

*Katarzyna Heryan (AGH University of Science and Technology, Poland)*  
*Andrzej Skalski (AGH University of Science and Technology, Poland)*  
*Janusz Gajda (AGH University of Science and Technology, Poland)*  
*Tomasz Drewniak (Specialized Municipal Hospital G. Narutowicz, Poland)*  
*Jacek Jakubowski (Rydygier Memorial Hospital, Poland)*

**11:20 - 12:20**

### Novel Imaging Systems

**Room:** Ballroom B

**Session Chair:** Michalis Zervakis (Technical University of Crete, Greece)

### 11:20 Large Range Self-Sensing Atomic Force Microscope (LR-SAFM) for Surface Topography

*Ahmed El Melegy (FMT Institute, Germany & National Institute for Standards (NIS), Egypt)*  
*Tino Hausotte (FMT Institute, Germany)*  
*Mohammad Younes (Alexandria University, Egypt)*  
*Mohamed Amer (National Institute for Standards (NIS), Egypt)*  
*Benedict Weinert (FMT Institute, Germany)*  
*Ute Kloepzig (FMT Institute, Germany)*

### 11:35 A Novel 3D Multispectral Vision System Based on Filter Wheel Cameras

*Chen Zhang (Ilmenau University of Technology, Germany)*  
*Maik Rosenberger (Ilmenau University of Technology, Germany)*  
*Andreas Breitbarth (Ilmenau University of Technology, Germany)*  
*Gunther Notni (Ilmenau University of Technology, Germany)*

### 11:50 Design of a low-cost integrated Electrical Resistance Tomography (ERT) system based on serial bus

*Shupeí Wang (The University of Manchester, United Kingdom)*  
*Yuan Liu (University of Manchester, United Kingdom)*  
*Konstantinos Andrikopoulos (University of Manchester, United Kingdom)*  
*Wuliang Yin (The University of Manchester, United Kingdom)*

### 12:05 Initial Clinical Validation of a Novel Microwave Apparatus for Testing Breast Integrity

*Lorenzo Sani (UBT – Umbria Bioengineering Technologies, Italy)*  
*Martina Paoli (UBT - Umbria Bioengineering Technologies, Italy)*  
*Giovanni Raspa (UBT – Umbria Bioengineering Technologies, Italy)*  
*Navid Ghavami (London South Bank University, United Kingdom)*  
*Francesco Sacchetti (University of Perugia, Italy)*  
*Andrea Saracini (Perugia Hospital, Italy)*  
*Simonetta Ercolani (Perugia Hospital, Italy)*  
*Eleonora Vannini (Perugia Hospital, Italy)*  
*Michele Duranti (Perugia Hospital, Italy)*

## Wednesday, October 5

12:20 - 13:20

### Electrical Tomographic Imaging Techniques

Room: Ballroom A

Session Chair: Yixin Ma (Shanghai Jiao Tong University, P.R. China)

**12:20 A New Symmetric Semi-parallel Electrical Impedance Tomography (EIT) System - II: The Performance**

*Liwen Miao (Shanghai Jiao Tong University, P.R. China)*

*Yixin Ma (Shanghai Jiao Tong University, P.R. China)*

*Xinyi Chen (Shanghai Jiao Tong University, P.R. China)*

*Xiaofan Xiong (Shanghai Jiao Tong University, P.R. China)*

*Ping Cai (Shanghai Jiao Tong University, P.R. China)*

*Peng Qin (Shanghai Jiao Tong University, P.R. China)*

*Xiaojun Ji (Shanghai Jiao Tong University, P.R. China)*

*Tao Han (Shanghai Jiao Tong University, P.R. China)*

**12:35 Coupling Simulation for Electrical Resistance Tomography**

*Jiamin Ye (Chinese Academy of Sciences, P.R. China)*

*Meng Wu (Chinese Academy of Sciences, P.R. China)*

*Hanqiao Che (Chinese Academy of Sciences, P.R. China)*

*Haigang Wang (Chinese Academy of Sciences, P.R. China)*

*Wuqiang Yang (The University of Manchester, United Kingdom)*

**12:50 Effect of electrode-to-gap ratio on electrical capacitance tomography images**

*Wenbin Tian (University of Manchester, United Kingdom)*

*Jiangtao Sun (The University of Manchester, United Kingdom)*

*Mimi Faisyalini Ramli (University of Manchester, United Kingdom)*

*Wuqiang Yang (The University of Manchester, United Kingdom)*

**13:05 Monitoring Cleaning-In-Place by Electrical Resistance Tomography with Dynamic References**

*Shupeí Wang (University of Manchester, United Kingdom)*

*Wuliang Yin (University of Manchester, United Kingdom)*

12:20 - 13:20

### Pattern Recognition and Features Extraction

Room: Ballroom B

Session Chair: Nikolaos D. Doulamis (National Technical University of Athens, Greece)

**12:20 Faster-Than-Real-Time Linear Lane Detection Implementation Using SoC DSP TMS320C6678**

*Rui Fan (University of Bristol, United Kingdom)*

*Victor Prokhorov (University of Bristol, United Kingdom)*

*Naim Dahnoun (University of Bristol, United Kingdom)*

**12:35 Localized Global Descriptors for Image Retrieval: An Extensive Evaluation on Adaptations to the Simple Model**

*Nektarios Anagnostopoulos (Klagenfurt University, Austria)*

*Chryssanthi Iakovidou (Democritus University of Thrace, Greece)*

*Savvas A Chatzichristofis (Democritus University of Thrace, Greece)*

*Yiannis Boutalis (Democritus University of Thrace, Greece)*

*Mathias Lux (Klagenfurt University, Austria)*

## Wednesday, October 5

- 12:50 FAST-MDL: Fast Adaptive Supervised Training of Multi-Layered Deep Learning Models for Consistent Object Tracking and Classification**  
*Nikolaos Doulamis (National Technical University of Athens, Greece)*  
*Athanasios Voulodimos (National Technical University of Athens, Greece)*
- 13:05 Low-cost Multi-spectral Face Imaging for Robust Face Recognition**  
*Narayan Vetrekar (Goa University, India)*  
*Raghavendra Ramachandra (Norwegian Biometrics Laboratory, Norway)*  
*Rajendra Soiru Gad (Goa University, India)*

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**13:20 - 14:30**

**Lunch**

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**14:30 – 15:30**

**Room:** Ballroom A

**Keynote: Computer Vision in Medical Imaging and Measurements: Making Sense of Visual Data**

*Jacob Scharcanski, UFRGS - Federal University of Rio Grande do Sul, Brazil*

**14:30 – 15:30**

**Room:** Ballroom B

**Lecture 9: Current status of industrial tomography**

*Wuqiang Yang, University of Manchester, United Kingdom*

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**15:30 - 16:45**

**Emerging Imaging Techniques**

**Room:** Ballroom A

**Session Chair:** Matteo Pastorino (University of Genoa, Italy)

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- 15:30 Brain Stroke Detection by Microwave Imaging Systems: Preliminary Two-Dimensional Numerical Simulations**  
*Igor Bisio (University of Genoa, Italy)*  
*Alessandro Fedeli (University of Genoa, Italy)*  
*Fabio Lavagetto (University of Genoa, Italy)*  
*Giulio Luzzati (University of Genoa, Italy)*  
*Matteo Pastorino (University of Genoa, Italy)*  
*Andrea Randazzo (University of Genoa, Italy)*  
*Emanuele Tavanti (University of Genoa, Italy)*
- 15:45 Further Investigations on the Capabilities of Inverse Scattering Procedures to Recover Velocity Profiles of Cylinders Moving in the Axial Direction**  
*Massimo Brignone (University of Genoa, Italy)*  
*Alessandro Fedeli (University of Genoa, Italy)*  
*Gian Luigi Gragnani (University of Genoa, Italy)*  
*Matteo Pastorino (University of Genoa, Italy)*  
*Mirco Raffetto (University of Genoa, Italy)*  
*Andrea Randazzo (University of Genoa, Italy)*
- 16:00 A Self-Similar and Sparse Approach for Spectral Mosaic Snapshot Recovery**  
*Grigorios Tsagakatakis (FORTH, Greece)*  
*Panagiotis Tsakalides (FORTH and University of Crete, Greece)*

## Wednesday, October 5

- 16:15 Reconstruction of Temperature Distribution for Swirling Flames Using One-dimensional TDLAS Tomography**  
*Chang Liu (Beihang University, P.R. China)*  
*Lijun Xu (Beihang University, P.R. China)*  
*Zhang Cao (Beihang University, P.R. China)*  
*Fangyan Li (Beihang University, P.R. China)*  
*Yuzhen Lin (Beihang University, P.R. China)*
- 16:30 Model-based Image Reconstruction for Electrical Capacitance Tomography with a Prior Calculated Database**  
*Marco Antonio Rodriguez Frias (University of Manchester, United Kingdom)*  
*Wuqiang Yang (University of Manchester, United Kingdom)*

**15:30 - 16:45**

### **Efficient Characterization and Detection Techniques**

**Room:** Ballroom B

**Session Chair:** Anastasia Pampouchidou (University of Burgundy, France)

- 15:30 Automated Characterization of Mouth Activity for Stress and Anxiety Assessment**  
*Anastasia Pampouchidou (University of Burgundy, France)*  
*Matthew Pediaditis (Foundation for Research & Technology - Hellas, Greece)*  
*Franco Chiarugi (Foundation for Research & Technology - Hellas, Greece)*  
*Kostas Marias (Foundation for Research & Technology - Hellas, Greece)*  
*Panagiotis Simos (School of Medicine, University of Crete, Greece)*  
*Fan Yang (University of Burgundy, France)*  
*Fabrice Meriaudeau (University of Burgundy, France & Universiti Teknologi Petronas, Malaysia)*  
*Manolis Tsiknakis (Foundation for Research & Technology - Hellas & Technical Educational Institute of Crete, Greece)*
- 15:45 Qualitative and Quantitative Determination of Oil Base Mud Using Non-Negative Matrix Factorization**  
*George Livanos (Technical University of Crete, Greece)*  
*Nikos Pasadakis (Technical University of Crete, Greece)*  
*Michalis Zervakis (Technical University of Crete, Greece)*  
*George Giakos (Manhattan College, USA)*
- 16:00 Smartphone-based Urine Strip Analysis**  
*Marios Anthimopoulos (University of Bern & Bern University Hospital, Switzerland)*  
*Sidharta Gupta (University of Bern & Bern University Hospital, Switzerland)*  
*Spyridon Arampatzis (Bern University Hospital, Switzerland)*  
*Stavroula Mouggiakakou (University of Bern, Switzerland)*
- 16:15 Internet-Connected High-Throughput and High-Resolution Three-Dimensional Tissue Scanner to Enable Large-Scale Automated Histology**  
*Shruthi Raghavan (Kettering University, USA)*  
*Matthew Goodman (3Scan, USA)*  
*Todd Huffman (3Scan, USA)*  
*Cody Daniel (3Scan, USA)*  
*Corey Monteith (3Scan, USA)*  
*Jaerock Kwon (Kettering University, USA)*

## Wednesday, October 5

**16:30 Hyperspectral Imaging and Spectral Classification for Assisting in Vivo Diagnosis of Melanoma Precursors: Preliminary Results Obtained From Mice**

*Athanasios Tsapras (Technical University of Crete, Greece)*  
*Terzakis Emmanouil (Technical University of Crete, Greece)*  
*Papadakis Emmanouil (Technical University of Crete, Greece)*  
*Costas Balas (Technical University of Crete, Greece)*  
*Antonios Makris (Center for Research and Technology Hellas, Greece)*  
*Christos Tsatsanis (University of Crete, Greece)*  
*Efstathios Stathopoulos (University of Crete, Greece)*

**16:45 Weakly-Supervised Convolutional Learning for Detection of Inflammatory Gastrointestinal Lesions**

*Spiros Georgakopoulos (University of Thessaly, Greece)*  
*Dimitris K Iakovidis (University of Thessaly, Greece)*  
*Michael Vasilakakis (University of Thessaly, Greece)*  
*Vassilis Plagianakos (University of Thessaly, Greece)*  
*Anastasios Koulaouzidis (The Royal Infirmary of Edinburgh, United Kingdom)*

**17:00 - 17:15**  
**Coffee Break**

**17:00 - 18:40**  
**Poster Session**

**Session Chairs:** *Dimitris K Iakovidis (University of Thessaly, Greece)*  
*Michalis Zervakis (Technical University of Crete, Greece)*

**A Surrogate Channel Based Analysis of EEG Signals for Detection of Epileptic Seizure**

*Saqib Ejaz Awan (National University of Sciences & Technology (NUST), Pakistan)*  
*Sajid Gul Khawaja (National University of Sciences and Technology (NUST), Pakistan)*  
*Muazzam A. Khan (National University of Sciences & Technology (NUST), Pakistan)*  
*Muhammad Usman Akram (National University of Sciences & Technology (NUST), Pakistan)*

**3D Modelling of Cultural Heritage Objects From Photos Posted over the Twitter**

*Anastasios D Doulami (National Technical University of Athens, Greece)*  
*Giannis Katsaros (Exus Software Limited, United Kingdom)*

**Hyperspectral Selection Based Algorithm for Plant Classification**

*Ali Alsuwaidi (University of Manchester, United Kingdom)*  
*Charles Veys (University of Manchester, United Kingdom)*  
*Martyn Hussey (University of Manchester, United Kingdom)*  
*Bruce Grieve (University of Manchester, United Kingdom)*  
*Hujun Yin (University of Manchester, United Kingdom)*

**Drunk Person Identification Using Local Difference Patterns**

*Georgia Koukiou (University of Patras, Greece)*  
*Vassillis Anastassopoulos (University of Patras, Greece)*

## Wednesday, October 5

### **Supervised Learning for Out-of-Stock Detection in Panoramas of Retail Shelves**

*Luís Rosado (Fraunhofer AICOS, Portugal)*  
*João Gonçalves (Fraunhofer AICOS, Portugal)*  
*João Costa (Fraunhofer AICOS, Portugal)*  
*David Ribeiro (Fraunhofer AICOS, Portugal)*  
*Filipe Soares (Fraunhofer AICOS, Portugal)*

### **Fast visual part inspection for bin picking**

*Nikolaos Rofalis (Aalborg University, Denmark)*  
*Anders Olesen (Technical University of Denmark, Denmark)*  
*Michael Jakobsen (Technical University of Denmark, Denmark)*  
*Volker Krüger (Aalborg University, Denmark)*

### **Applying Online Feature Selection for Fall Detection**

*Donghui Wu (Dalian University of Technology, P.R. China)*  
*Zhelong Wang (Dalian University of Technology, P.R. China)*

### **Real Time Measurements for Quality Control of Industrial Rod Manufacturing**

*Konstantina Kottari (University Of Thessaly, Greece)*  
*Konstantinos Delibasis (University Of Thessaly, Greece)*  
*Vassilis Plagianakos (University Of Thessaly, Greece)*

### **A Quantitative Error Measure for the Evaluation of Roof Edge Detectors**

*Baptiste Magnier (Ecole des Mines d'Al' es, France)*  
*Alexandre Le (Ecole des Mines d'Al' es, France)*  
*Albert Zogo (Ecole des Mines d'Al' es, France)*

### **Multimodal Affective State Recognition in Serious Games Applications**

*Athanasios Psaltis (Centre for Research and Technology Hellas, Greece)*  
*Kyriaki Kaza (Centre for Research and Technology Hellas, Greece)*  
*Kiriakos Stefanidis (Centre for Research and Technology Hellas, Greece)*  
*Spyridon Thermos (Centre for Research and Technology Hellas, Greece)*  
*Konstantinos Apostolakis (Centre for Research and Technology Hellas, Greece)*  
*Kosmas Dimitropoulos (Centre for Research and Technology Hellas, Greece)*  
*Petros Daras (Centre for Research and Technology Hellas, Greece)*

### **A hybrid shape constraint for level set-based active contours**

*Ines Sakly (University of Manouba, Tunisia)*  
*Mohamed Amine Mezghich (University of Manouba, Tunisia)*  
*Slim M'hiri (University of Manouba, Tunisia)*  
*Faouzi Ghorbel (University of Manouba, Tunisia)*

### **Imaging methods provide crucial understanding of the uptake and distribution processes of biodegradable ZnO doped Eu<sup>3+</sup> nanoparticles in living organism**

*Ewelina Wolska - Kornio (Polish Academy of Sciences, Poland)*  
*Jarosław Kaszewski (Polish Academy of Sciences, Poland)*  
*Bartłomiej Witkowski (Polish Academy of Sciences, Poland)*  
*Marek Godlewski (Polish Academy of Sciences, Poland)*  
*Paula Kiełbik (Warsaw University of Life Sciences – SGGW, Poland)*  
*Mikołaj A. Gralak (Warsaw University of Life Sciences – SGGW, Poland)*  
*Zdzisław Gajewski (Warsaw University of Life Sciences – SGGW, Poland)*  
*Michał M. Godlewski (Warsaw University of Life Sciences – SGGW, Poland)*

## Wednesday, October 5

### **A New Approach in Image Registration**

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

*Emmanuel Mathioudakis (Technical University of Crete, Greece)*

*Nikos Kampanis (Foundation for Research and Technology, Greece)*

*Manolis Tsiknakis (Foundation for Research and Technology/Technological Educational Institute of Crete, Greece)*

*Kostas Marias (Foundation for Research and Technology, Greece)*

**17:00 - 17:45**

### **Image Analysis and Processing III**

**Room:** Ballroom B

**Session Chair:** George Livanos (Technical University of Crete)

### **17:00 Reduction of Building Façade Model Complexity using Computer Vision**

*Vasileios Paravolidakis (Technical University of Crete, Greece)*

*Konstantinos Bacharidis (Technical University of Crete, Greece)*

*Froso Sarri (Technical University of Crete, Greece)*

*Lemonia Ragia (Technical University of Crete, Greece)*

*Michalis Zervakis (Technical University of Crete, Greece)*

### **17:15 A Hybrid Algorithm for Dense Stereo Correspondences in Challenging Indoor Scenes**

*Stavros Georgousis (National Technical University of Athens, Greece)*

*Christos Stentoumis (National Technical University of Athens, Greece)*

*Nikolaos D. Doulamis (National Technical University of Athens, Greece)*

*Athanasios Voulodimos (National Technical University of Athens, Greece)*

### **17:30 Weed Recognition Framework for Robotic Precision Farming**

*Tsampikos Kounalakis (Aalborg University, Denmark)*

*Georgios Triantafyllidis (Aalborg University, Denmark)*

*Lazaros Nalpantidis (Aalborg University, Denmark)*



## Thursday, October 6

**08:10 - 09:00**

**Room:** Ballroom A

**Lecture 10: "Computational and image analysis challenges for assessing tumor environment with perfusion and diffusion MRI"**

*Konstantinos Marias, FORTH, Greece*

**09:00 - 10:00**

**Medical Diagnostics Techniques II**

**Room:** Ballroom A

**Session Chair:** Katerina Nikiforaki (Foundation for Research and Technology – Hellas (FORTH), Greece)

**09:00 Classification of Vessels as Arteries Verses Veins Using Hybrid Features for Diagnosis of Hypertensive Retinopathy**

*Samra Irshad (NUST, Pakistan)*

*Muhammad Ahmad (NUST, Pakistan)*

*Muhammad Usman Akram (NUST, Pakistan)*

*Asad Malik (NUST, Pakistan)*

*Sarmad Abbas (COMSATS, Pakistan)*

**09:15 Assessment of Papilledema Using Fundus Images**

*Kamran Yousaf (NUST, Pakistan)*

*Muhammad Usman Akram (NUST, Pakistan)*

*Usman Ali (NUST, Pakistan)*

*Shahzad Sheikh (NUST, Pakistan)*

**09:30 Semi-and-Automatic Wheal Measurement System for Prick Test Digital Imaging and Analysis**

*Cesare Svelto (Politecnico di Milano, Italy)*

*Matteo Matteucci (Politecnico di Milano, Italy)*

*Roberto Resmini (Politecnico di Milano, Italy)*

*Alexey Pniiov (Bauman Moscow State Technical University, Russia)*

*Lorenzo Pedotti (CD Pharma Group Srl, Italy)*

*Fabio Giordano (CD Pharma Group Srl, Italy)*

**09:45 Addressing Intravoxel Incoherent Motion Challenges Through an Optimized Fitting Framework for Quantification of Perfusion**

*Georgios Manikis (Foundation for Research and Technology – Hellas, Greece)*

*Katerina Nikiforaki (Foundation for Research and Technology – Hellas, Greece)*

*Georgios Ioannidis (Foundation for Research and Technology – Hellas, Greece)*

*Nikolaos Papanikolaou (Champalimau Center for the Unknown, Portugal)*

*Kostas Marias (Foundation for Research and Technology – Hellas, Greece)*

## Thursday, October 6

**09:00 - 10:00**

### **Image Segmentation**

**Room:** Ballroom B

**Session Chair:** Sevastianos Chatzistergos (National Technical University of Athens, Greece)

### **09:00 An Improved OTSU's Method for CT Image Boundary Contour Extraction**

*Hangzhou Sun (Shanghai Jiao Tong University, P.R. China)*

*Yixin Ma (Shanghai Jiao Tong University, P.R. China)*

*Huawei Wu (Shanghai Jiao Tong University, P.R. China)*

*Liwen Miao (Shanghai Jiao Tong University, P.R. China)*

*Xinyi Chen (Shanghai Jiao Tong University, P.R. China)*

*Xiaojun Ji (Shanghai Jiao Tong University, P.R. China)*

*Ping Cai (Shanghai Jiao Tong University, P.R. China)*

### **09:15 Mammary Gland Segmentation Using Intensity Correction for Brightness Attenuation in Breast Ultrasound Image**

*Yudai Yamazaki (University of Tsukuba, Japan)*

*Eiichi Takahashi (National Institute for Advanced Industrial Science and Technology, Japan)*

*Masaya Iwata (National Institute of Advanced Industrial Science and Technology, Japan)*

*Hirokazu Nosato (National Institute of Advanced Industrial Science and Technology, Japan)*

*Ayumi Izumori (Takamatsu Heiwa Hospital, Japan)*

*Takuji Iwase (The Center Institute Hospital of The Japanese Foundation for Cancer Research, Japan)*

*Yumi Kokubu (The Center Institute Hospital of The Japanese Foundation for Cancer Research, Japan)*

*Hidenori Sakanashi (National Institute of Advanced Industrial Science and Technology, Japan)*

### **09:30 Pectoral muscle segmentation on mammographic images based on radial lengths**

*Sevastianos Chatzistergos (National Technical University of Athens, Greece)*

*Ioannis Andreadis (National Technical University of Athens, Greece)*

*Konstantina S Nikita (National Technical University of Athens, Greece)*

## Thursday, October 6

**10:00 - 10:45**

### **Quantitative Imaging**

**Room:** Ballroom A

**Session Chair:** Cesare Svelto (Polytechnic of Milan, Italy)

- 10:00 Quantification of Carbohydrate Based on Scan Image Analysis for TLC Technique Compensating Lack of Spot Overlaps**  
*Hiroshi Ijima (Wakayama University, Japan)*  
*Masanori Yamaguchi (Wakayama University, Japan)*
- 10:15 Support Vector Machine and Extreme Learning Machine Based Cataract Classification and Grading**  
*Liye Guo (Tsinghua University, P.R. China)*  
*Lihui Peng (Tsinghua University, P.R. China)*  
*Jijiang Yang (Tsinghua University, P.R. China)*
- 10:30 Signal Fusion Based on Intensity and Motion Variations for Remote Heart Rate Determination**  
*Christian Wiede (Chemnitz University of Technology, Germany)*  
*Julia Richter (Chemnitz University of Technology, Germany)*  
*Gangolf Hirtz (Chemnitz University of Technology, Germany)*

**10:00 - 11:15**

### **Image Reconstruction Techniques**

**Room:** Ballroom B

**Session Chair:** Selina Kolokytha (EMPA, Switzerland)

- 10:00 Microwave Imaging Systems: Three-dimensional Reconstructions of Dielectric Targets**  
*Claudio Estatico (University of Genoa, Italy)*  
*Alessandro Fedeli (University of Genoa, Italy)*  
*Matteo Pastorino (University of Genoa, Italy)*  
*Andrea Randazzo (University of Genoa, Italy)*  
*Emanuele Tavanti (University of Genoa, Italy)*
- 10:15 A methodology and a software tool for 3D reconstruction of coronary and carotid arteries and atherosclerotic plaques**  
*Antonis Sakellarios (Institute of Molecular Biology and Biotechnology, FORTH, Greece)*  
*George Rigas (Institute of Molecular Biology and Biotechnology, FORTH, Greece)*  
*Themis Exarchos (Institute of Molecular Biology and Biotechnology, FORTH, Greece)*  
*Dimitris Fotiadis (Institute of Molecular Biology and Biotechnology, FORTH, Greece)*
- 10:30 Image Reconstruction with Different Sensitivity Maps Generated with Different Background**  
*Mimi Faisyalini Ramli (University of Manchester, United Kingdom)*  
*Wenbin Tian (University of Manchester, United Kingdom)*  
*Wuqiang Yang (University of Manchester, United Kingdom)*

## Thursday, October 6

- 10:45**    **A visualization system for histological image annotation and 3D reconstruction of parametric geometries of the inner ear**  
*Antonis Sakellarios (University of Ioannina, Greece)*  
*Nikolaos Tachos (University of Ioannina, Greece)*  
*George Rigas (University of Ioannina, Greece)*  
*Thanos Bibas (University of Athens, Greece and University College of London, United Kingdom)*  
*Dimitris Fotiadis (FORTH, University of Ioannina, Greece)*
- 11:00**    **Human Tracking Driven Activity Recognition in Video Streams**  
*Athanasios Voulodimos (National Technical University of Athens, Greece)*  
*Nikolaos Doulamis (National Technical University of Athens, Greece)*  
*Anastasios Doulamis (National Technical University of Athens, Greece)*  
*Constantinos Lalos (National Technical University of Athens, Greece)*  
*Christos Stentoumis (National Technical University of Athens, Greece)*

**11:15 - 11:45**

**Student Awards and Closing Ceremony**