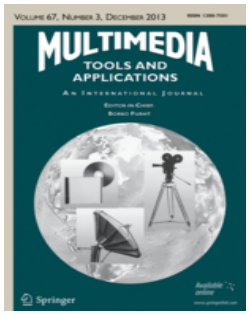
Journal Multimedia Tools and Applications

Special Issue on

Multimedia Systems for Critical Engineering Applications



In a rapidly changing global economy, experiencing an unparalleled integration of science and technology, the multifaceted field of imaging requires drastic adaptation to the rapid changes of our society, economy, environment, and technological revolution; there is an urgent need to address and propose dynamic and innovative solutions to problems which tend to be either complex or static or rapidly evolving with a large number of unknowns. For instance, the battle against the cancer, fight against the terror, exploration and management of the natural resources, remote sensing, underground and tunnel inspection, and environmental monitoring are some of the areas that need to be addressed with urgency. The complexity of the involved imaging scenarios, and demanding design parameters such as speed, signal-to noise ratio, high specificity, high contrast and spatial resolution, high-scatter rejection, complex background, harsh environment, necessitates the development of multifunctional, scalable, and efficient imaging suite of sensors, solutions driven by innovation, operating on diverse detection and imaging principles. Artificial neural networks combined with pattern recognition techniques such as classification, clustering, feature selection, texture analysis, segmentation, image compression, color representation and several other aspects of image processing promise the solution of challenging technical problems, under complex imaging scenarios, with applications in medical imaging, remote sensing, aerospace, radars, defense, and homeland security applications.

The MTAP journal, which can be found at the site: http://www.springer.com/computer/information+systems+and+applications/journal/11042 invites this call for a special issue on “Multimedia Systems for Critical Engineering Applications” which appears on the website:http://static.springer.com/sgw/documents/1593949/application/pdf/MTAP%2BPaper_final_call_critical_engineering_applications_11.2.pdf.
In particular, this special issue of MTAP will include significantly expended versions of papers presented in the 2016 IEEE International Conference on Imaging Systems and Techniques (IST2016), as appears in http://ist2016.ieee-ims.org/special-issues. This special issue of MTAP journal invites papers coming from academia and the technical community to present their latest research findings, ideas, developments and applications in the wide area of multimedia research, such as imaging sensors, processing and pattern recognition, medical imaging, bio-informatics, computer vision, remote sensing, surveillance, inspection and monitoring, towards complex and real-world engineering and computer science applications. Topics covered involve but are not limited to:

Imaging modalities and pattern recognition

- Imaging Devices, Modalities and Techniques
- Image processing and pattern recognition
- Emerging imaging trends
- Cameras, microscopy, spectroscopy, displays, device miniaturization
- Optical polarimetric reflectance spectroscopy, multispectral imaging, narrow band imaging, Raman scattering, laser acoustics, high magnification broncho-videoscopy
- Optical coherence tomography (OCT), MRI, PET, SPECT, CT, microwave and nano-imaging
- Electric Computed Tomography (ECT)

Multimedia Retrieval in Spectral Imaging

- Content-based retrieval in hyper/multi-spectral domain
- Summarization tools in hyper/multi-spectral domain
- Relevance feedback techniques to assist experts in taking complex decisions
- Behavioral analysis and actions recognition for complex engineering applications
- 4D/5D image reconstruction
- Semantic representation and content enrichment

Remote Sensing and Robotics

- Remote sensing, surveillance, ATR, ladars & lidars
- Electromagnetic Scattering
- Autonomous aerial and underwater imaging systems
- Advanced space instruments and satellite imaging
- Sensors for aerospace applications
- Image processing and pattern recognition
- spectral registration
- High dimensional data reduction in spectral bands
- Bioinspired Robotic Vision Systems

Mobile Platforms and Wireless Image Transmission

- Embedded imaging, mobile and communication applications
- Internet of the Things and Imaging
- Cloud Computing, Imaging, and mobile Platforms
- Cybersecurity and Imaging

Visualization, Inspection, Characterization, and Manufacturing

- Robotics, and surgical guidance imaging
- Urban planning, civil engineering monitoring & transportation
- Homeland security, surveillance, inspection and monitoring
- Industrial Inspection and material characterization
- Pharmaceutical and food processing vision inspection systems
- Environmental monitoring & early detection of natural hazards
- Cultural heritage applications (restoration, large-scale/novel digitalization, material characterization)

Paper Format and Submission

For general author guidelines and author information pack, please visit:
http://www.springer.com/computer/information+systems+and+applications/journal/11042?detailsPage=pltci_2545836
Paper submission is done online: https://www.editorialmanager.com/mtap/default.aspx Please notice that you have to specify submission for the special issue on "Multimedia Systems for Critical Engineering Applications ".

Important Dates:

Manuscript submission due:	January 30, 2017
First Review Results:	March 31, 2017
Final Revision:	April 30, 2017
Final Review and Decision:	May 30, 2017
Publication date:	4th Quarter 2017

Guest Editors:

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Prof. Anastasios Doulamis received the Diploma degree in Electrical and Computer Engineering from the National Technical University of Athens (NTUA) in 1995 with the highest honour (9.52 out of 10, first ranked among all classmates) and the PhD degree in Electrical and Computer Engineering from NTUA in 2000. He is currently Associate Professor in Technical University of Crete, while from 1st of February of 2014 he is assistant professor at the National Technical University of Athens.

He is author of more 200 papers in the area of multimedia processing and artificial intelligence among them 17 in IEEE/ACM journals papers and more than 50 journal papers. He has also more than 2000 citations in the respective field.

He has served as organized in many major workshops, like ACM AREA 2008, ACM/IEEE Artemis 2010, 2011, 2012, 2013, GridNet 2012, ACM Event Analysis 208, 2009, 2010, 2011, Cultural Heritage Workshop 2013, etc. He has served as Guest Editor of the Multimedia Tools and Applications, Springer Press (Three times) and Future Generation Computer Systems, Elsevier Press and Advances in Multimedia Journal, Hidawi Press. He is Technical Program Committee of IEEE International Conference on Pattern Analysis, IEEE Fuzzy Conference, European Signal Processing Conference.

Prof. Anastasios Doulamis is the Coordinator of the EU funded project 4D CH World, was served as technical coordinator of the SCOVIS EU project "Self Configurable Cognitive Video Supervision" starting in March 2008 with the aim of promoting research in the field of detecting high level semantic concepts, activities and procedures in video streams. He is currently involved in many European Projects like, eVacuate IP, Experimedia, Robinspect, and the national projects iPromotion, Viopolis, Thalis-AEIS. He was involved as scientific responsible of the European Union funded projects Scovis, Gria, Gridlab, Polymnia and the national projects Poseidon, e-park, Semveillance, PENED-semantic analysis, Pythogoras-II, etc.

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Prof. Giakos is a *Chairman and Professor, Electrical and Computer Engineering, Director of Graduate Program*, Manhattan College, NYC. Dr. Giakos research is articulated in imaging technology innovation, through the integration of physics and engineering, towards the development of high performance imaging systems for visualization, imaging, and graphics, bioinspired vision robotics, bioinformatics, ladars and surveillance sensor platforms, multispectral polarimetry, nanophotonics, characterization and testing platforms, for healthcare, pharmaceutical, and industry sectors.

Dr. Giakos is an IEEE Fellow and an Office of Naval Research Distinguished Faculty Fellow. 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".

His research group was among the first in the US to pioneer the characterization of the detection and imaging characteristics of Cadmium Zinc Telluride semiconductor substrates for flat-panel digital radiography applications. He has fostered several breakthrough inventions which have been rewarded with fifteen (18) US and international Patent Awards and more than 200 peer-review articles and journal publications. He is a. He received numerous prestigious research faculty fellowship awards from the Department of the Air Force, NASA, National Academy of Sciences, and Naval Research Laboratory.

Dr. Giakos serves as the Chairman of the TC-19 IEEE Technical Committee on "Imaging Measurements", General Chairman of the IEEE International Conference on Imaging Systems and Techniques, Director of the IEEE International School on Imaging, Director of the IEEE Industry-Acadamia-Gonvernment Forum, Guest Editor of the Special Issue on Imaging Systems and Techniques in the IEEE Transactions on Instrumentation and Measurement, 1996, a Guest Editor of the Special Issue on Imaging Systems and Techniques in the IEEE Transactions on Instrumentation and Measurement, 2006, a Guest Editor for the Special Issue on Imaging Systems and Techniques in the Measurement Science and Technology Journal, 2008, a Guest Editor of the Special Issue on Imaging System and Techniques, IET Image Processing Journal, IOP, 2009, Measurement Science and Technology, 2011, 2012, 2015. He is a member of the IEEE Instrumentation and Measurement Society, IEEE Nuclear and Plasma Sciences Society, IEEE Photonics Society, IEEE Nanotechnology Forum, and SPIE. He maintains active collaborations with the Department of Navy, Department of the Air Force, Lockheed Martin, NASA, NIH, and Cleveland Clinic.

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Euripides Petrakis (http://www.intelligence.tuc.gr/~petrakis) received Bachelor in Physics from the National University of Athens in 1986. He holds a Ph.D. degree from the University of Crete, Department of Computer Science, since 1993. From 1986 to 1993 he was a research assistant at the information systems laboratory of the Foundation for Research and Technology Hellas (FORTH). Between 1996 and 1998 he was a visiting researcher at the Dept. Computer Science of York University, Toronto, Canada and at GMD/IPSI Institute, Darmstadt, Germany. He is serving as professor at the Computer Science division, and since 2006, as director of the Intelligent Systems Laboratory. Prof. Petrakis is involved in research on modern aspects of multimedia information systems, Web information systems, semantic Web and. recently, cloud computing. Prof. Petrakis has authored or co-authored over 85 papers in high quality journals and conferences and has over 2100 references to his published work (h-index 18). He was awarded with an ERCIM fellowship in 1998. He is involved (as principal investigator) in several research projects funded by the Greek Government and the EU and attracted over 1.5Meuros funding.

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Michalis Zervakis (member of IEEE) holds a PhD degree from the University of Toronto, Department of Electrical Engineering. He is serving as Professor at the Department of Electronics and Computer Engineering and directs the Digital Image and Signal Processing Laboratory at TUC. His research interests include modern aspects of signal and image processing, data mining and pattern recognition, imaging systems and integrated automation systems. Application areas include bioinformatics, biosignal analysis and medical Imaging, biomarker selection from mass genomic data, electro-encephalogram (EEG) analysis, time-frequency biosignal and EEG characterization, modeling of disease state and progression (diabetes, dementia , Alzheimer's disease), as well as cancer research on diagnosis & prognosis (breast, brain and ovarian cancer, leukemia). He has published over 100 scientific papers in these areas. He is involved on many national and European projects. He has participated in the program committee of several international conferences in the field of biomedical engineering.

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Lihui Peng (senior member of IEEE) received the B.Eng., M.Sc., and Ph.D. degrees in measurement science and electronics at Tsinghua University, Beijing, China, in 1990, 1995, 1998, respectively. He is currently a Professor with the Department of Automation, Tsinghua University, Beijing, China. He started his academic career in 1990 as a Lecturer at Tsinghua University. His current research interests include the measurement and imaging techniques for multiphase flow, process tomography, multi-sensor data fusion, flow measurement and instrumentation, medical image analysis, applications of machine learning in measurement and instrumentation. He has published more than 100 scientific papers. He has been a member of three Chinese national technical committees since 2001. He has participated in the Technical Program Committee of IEEE International Conference on Imaging Systems and Techniques, the International Symposium of Measurement Techniques for Multiphase Flow, the World Congress on Industrial Process Tomography, and the International Workshop on Industrial Process Tomography. His biography has been included in Who's Who in Science and Engineering since 2006.