EDITORIAL

Special section on imaging systems and techniques 2016

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Editorial

Special section on imaging systems and techniques 2016

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The 2016 IEEE International Conference on Imaging Systems and Techniques was held in Crete, Greece, on October 4–6 jointly with the International School on Imaging. It was the 13th consecutive year of the conference, following the successful conferences held previously in Stresa, Italy; Niagara Falls, Canada; Minori, Italy; Krakow, Poland; Chania, Greece; Shenzhen, China; Thessaloniki, Greece; Penang, Malaysia; Manchester, UK; Beijing, China; Santorini, Greece; and Hong Kong, China.

The objectives of IST 2016 are to explore the theory, metrology, engineering and clinical aspects of imaging systems and techniques operating on physical, engineering, molecular, and biochemical principles. It is important that these principles focus on the advancement and generation of new knowledge relating to the design, development, and applications of a range of imaging and spectroscopy technologies, devices, instruments, systems, and techniques.

Interestingly enough, 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. 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.

From the conference, a total of five papers, extended substantially from the conference proceeding versions, have been accepted for publication in this special issue. They do not only present the latest developments in the field of imaging systems and techniques, but also offer possible solutions to existing problems. We hope that this special issue will propel and upgrade the imaging field into unparalleled levels of knowledge, while stimulating further research and new applications for a wide spectrum of imaging modalities, spanning from the healthcare industry and clinical laboratories to remote sensing, inspection and characterization, homeland security, defense, and consumer electronics.

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