

# Preface

Signal and Image Processing (SIP) is about the mathematical and computational methods that form the basis of the specialist modules covering the theory and application of SIP algorithms for the analysis, interpretation, and processing of data in diverse fields such as computer vision, robotics, acoustics, medical diagnosis, remote sensing, and telecommunications, and so on.

The SIP explores research and engineering issues related to the modeling of signals, developing and evaluating algorithms for extracting the necessary information from the signal, and the implementation of these algorithms. Specific research areas include filter design, fast transforms, adaptive filters, spectrum estimation and modeling, sensor array processing, image processing, motion estimation from images, speech processing, geophysics, computer-aided tomography, image restoration, robotic vision, and pattern recognition.

The 4th International Conference on Signal and Image Processing 2012 (ICSIP 2012), organized by Dr. N.G.P Institute of Technology, Coimbatore, India during Dec 13–15, 2012 provides academia and industry to discuss and present the latest technological advances and research results in the fields of theoretical, experimental, and application of signal, image, and video processing. ICSIP 2012 also aims to bring together engineers and scientists in signal, image, and video processing from around the world for better cohesion and collaboration in the fields of mutual interest.

The ICSIP 2012 called for a wide range of recent research papers in the field of SIP with applications, theories, and algorithms from all over the world from budding researchers. The submission was flooded with more than 250 papers from 12 different countries across the world. A total of 113 papers were selected based on blind review by experts from the respective fields for publication in the proceedings in two volumes by Springer India in Lecture Notes in Electrical Engineering.

The editors to express their gratitude to the founder of the ICSIP series Dr. P. Nagabhushan, Professor, University of Mysore, India for guidance right from the beginning. Also, the editors are thankful to Dr. S. Murali, President, Maharaja Institutions, Mysore, India for his valuable suggestions and timely input.

The editors are extremely thankful to all the keynote speakers (Prof. Kay Chen TAN-NUS, Singapore, Prof. Subhas, Massey University, New Zealand and Prof. P. Nagabhushan, UoM, India), tutorial speakers (Dr. Mathew Cherian-Kovai Medical Center and Hospital, India, Dr. Jharna Mazumdar, Former ADE DRDO, Ministry of Defence, India, Dr. Kumar Rajamani, GE, India, and Dr. Venkatesh Babu, IISc, Bangalore, India), panel members, reviewers, advisory, and organizing committee members. The editors convey their heartiest gratitude to Springer India team for accepting to publish the research findings in their Lecture Notes in Electrical Engineering, without whom this proceedings would not have been in existence today.

Above all, the editors are much thankful to the management of Dr. NGPIT, Coimbatore, India for hosting the prestigious conference ICSIP 2012. It was definite that the conference and the institution would complement each other in bringing high quality researchers in one place. The editors thank the Chairman- Dr. Nalla G. Palaniswami, Secretary- Dr. Thavamani D. Palaniswami, CEO- Dr. O. T. Buvaneswaran, Principal and all faculty members of Dr. NGP Institute of Technology, Coimbatore, who have been given great support by extending their seamless contribution to bring this proceeding in a big way.

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