Editorial

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Biographical notes: Ashish Khare received both his MSc and PhD in Computer Science from the University of Allahabad, India, in 1999 and 2007, respectively. He was a Postdoctoral Fellow at the Gwangju Institute of Science and Technology (GIST), South Korea in 2007–2008. Currently, he is working as an Associate Professor of Computer Science, University of Allahabad, Allahabad, India. His research interests include image processing, computer vision, wavelet transforms, human activity recognition and behaviour analysis. He has published around 125 research papers in reputed international journals and conference proceedings. He has edited a book. He has supervised seven PhD theses. He has worked as a Principal Investigator of several research projects, on video surveillance, funded by the Government of India. He has served as a General Chair, co-Chair, convener and a member of program committees of several domestic and international conferences of repute.

Mahesh Chandra received his MTech from the JNTU, Hyderabad, India and his PhD from the Aligarh Muslim University, Aligarh, India, in 2000 and 2008, respectively. He was the HOD in the Department of Electronics and Communication at the SRMS College of Engineering and Technology, Bareilly, from 2002 to 2005. Presently, he is working as a Professor in the Department of Electronics and Communication Engineering at the Birla Institute of Technology, Mesra, Ranchi, India. His research interests are speech, signal and image processing and he has published more than 125 research papers and eight book chapters in these areas. He has also

published a book. He has supervised a number of PhD theses. He is the Principal Investigator of the Project of DEITY Consortium. He has organised national and international conference and delivered many invited talks in conferences.

Moongu Jeon received his MS and PhD in Computer Science and Scientific Computation from the University of Minnesota, in 1999 and 2001, respectively. He was a Postgraduate Researcher at the University of California, Santa Barbara, from 2001 to 2003. He then joined IBD-NRC, Winnipeg, MB, Canada, where he had worked for two years. In 2005, he joined the Gwangju Institute of Science and Technology (GIST), Korea, as an Assistant Professor, and now is working as a Full Professor. His main research interests are in machine learning and computer vision and he published around 200 research papers. Also, he is conducting several research projects on visual surveillance and machine learning as a principal investigator. He is associated with reputed journals as a member of the editorial board.

Computer vision methods and image analytics have steadily progressed over the last few decades and taken the lead in showing the significance of vision technology in our life. There is growing interest in theoretical aspects of image and video formation, recognition, motion detection, analysis, image and video retrieval, etc. The accumulation of big datasets is another serious challenge for the established vision and imaging techniques. Computer vision techniques and image analytics can be applied in a wide range of domains including healthcare, transport, smart homes, biometrics, safety and security. Use of embedded imaging system in mobile devices has created a new domain of applications of imaging and vision techniques. New demand of computer vision methods and image analytics is to have high computing capabilities at limited resources and in real-time constraints.

This special issue on 'Recent advances on emerging topics of computer vision methods and image analytics', focuses on advance scientific research in the broad field of computer vision with focuses on theory, applications, recent challenges and cutting-edge techniques. Some of the selected and expanded papers from the *5th International Conference on Computational Vision and Robotics (ICCVR-2014)*, held on 9–10 August 2014 at Bhubaneshwar, India, are also included in this special issue along with the other articles.

The quality level of the submissions for this special issue was very high. A total of 32 manuscripts were submitted to this issue in response to the call for papers. Based on a rigorous review process, seven papers (22%) were accepted for the publication in the special issue. Below, we briefly summarise the highlights of each paper.

Two papers of this special issue are on content-based image retrieval (CBIR). In 'Effective image retrieval based on hybrid features with weighted similarity measure and query image classification', V.P. Singh and R. Srivastava proposes a CBIR system, which is based on the fusion of chromaticity-colour moments and colour co-occurrence-based small dimension features using inverse variance weighted similarity measure. In addition, a supervised query image classification and retrieval model by filtering out irrelevant class images using a multiclass support vector machine (SVM) classifier is also presented. Basically, this model categorises and recovers the category of a query image based on its visual content and this successful categorisation of images significantly enhances the performance and searching time of retrieval system.

A. Boulemden et al. presented a CBIR system based on pachinko allocation model (PAM) and used a combination of colour, texture and textual features, in their article 'Content-based image retrieval with pachinko allocation model and a combination of colour, texture and text features'.

Human object classification method for video surveillance is presented in the third article of this special issue by M. Khare et al. in their paper entitled 'Combining Zernike moment and complex wavelet transform for human object classification'. This method uses combination of Daubechies complex wavelet transform and Zernike moment as a feature of object and matches Zernike moments of Daubechies complex wavelet coefficients, for classification of human object.

In the paper entitled 'Stairways detection based on approach evaluation and vertical vanishing point', by M. Khaliluzzaman and K. Deb, a method for staircase detection is proposed using different computer vision operations.

A method for recognition of facial expression is presented by A. Saha and S.N. Pradhan in the article 'Facial expression recognition based on eigenspaces and principle component analysis'. This method recognises the facial expressions from the input images, using the algorithm of eigenspaces and principle component analysis (PCA).

M. Badeche et al., in their paper 'An automatic natural feature selection system for indoor tracking – application to Alzheimer patient support', proposed a computer vision application to Alzheimer patient support for helping them in their indoor moves. The devised system could also be implemented on augmented-reality glasses with one single built-in camera.

Another paper of this special issue by E. Rashid titled 'Exploring necessity and utility of lightweight android chatting application', presents to highlight how lightweight android chatting application can help in using the resources of an Android device in a better way.

These seven selected contributions basically can reflect the new achievements in the Computer vision and image analytics and we hope they can provide a solid foundation for future new approaches and applications.

We would like to thank all authors who submitted their work for consideration in our special issue. We would also like to thank Editor-in-Chief Prof. Srikanta Patnaik, for the opportunity to edit this special issue.