

Preface

The Faculty of Engineering, Technology and Management, University of Kalyani, India is organizing the Second International Conference on INformation Systems Design and Intelligent Applications—2015 (INDIA-2015), during 8–9 January 2015 at the University of Kalyani. This is the First time the Faculty is organizing such a mega event covering all aspects of information system design and applications in Computer Science and Technology, General Science, Educational Research where scopes are not only limited to Computer Science researchers but also include researchers from Mathematics, Chemistry, Biology, Biochemistry, Engineering Statistics, Management and all other related areas where Computer Technologies may assist.

We have received papers from all corners of the world. A huge response has been received by INDIA-2015 in terms of submission of papers and we received 429 submissions across the globe. The Organizing Committee of INDIA-2015 constitutes a strong international programme committee for reviewing papers. A double-blind review process has been adopted. Each paper is reviewed by at least two and at most five reviewers. The decision system adopted by EasyChair has been employed and 210 papers have been selected thorough double-blind review process. The Committee has also checked for plagiarism through the professional software. Finally, 174 registered papers have been included in the two volumes of the proceedings as printed as well as online documents where 87 papers are there in each volume. INDIA-2015 received papers from ten countries outside India, namely Germany, USA, Korea, Portugal, Bangladesh, Nepal, Egypt, Australia, Iran and Vietnam.

Along with the general sessions, INDIA-2015 organizes four special sessions, namely *Multicriteria Decision Analysis and Information Technology (MCDA-IT)* (Chair: Prof. (Dr.) Bijay Baran Pal, Department of Mathematics, University of Kalyani, India), *Wireless Sensor Networks (WSNs)* (Chairs: Prof. Prasanta K. Jana, Department of Computer Science and Engineering, Indian School of Mines, Dhanbad, India and Dr. Ashok Kumar Turuk, Department of Computer Science and

Engineering, National Institute of Technology, Rourkela, India), *Machine Learning and Engineering Application (MLEA)* (Chairs: Dr. B.N. Biswal, Director (A & A), BEC, Bhubaneswar, India and Prof. Pritee Parwekar, ANITS, Visakhapatnam, India), and *Innovations in Pattern Recognition and Image Processing (PRE-IP)* (Chairs: Prof. (Dr.) S.C. Satapathy, Department of Computer Science and Engineering, ANITS, Visakhapatnam, India and Prof. Vikrant Bhateja, Department of Electronics and Communication Engineering, SRMGPC, Lucknow, India). We would like to thank the chairs and associates of the special sessions for all their initiatives to arrange the special sessions.

The proceedings of the conference is published in two volumes in **Advances in Intelligent Systems and Computing** (ISSN: 2194-5357), Springer, indexed by ISI Proceedings, DBLP, EI-Compendex, SCOPUS, Springerlink and will be available at <http://www.springer.com/series/11156>. We convey our sincere gratitude to the authority of Springer for providing the opportunity to publish the proceedings of INDIA-2015.

The first volume of the proceeding contains fields of research like Natural Language Processing, Artificial Intelligence, Virtualization, Intelligent Agent-based Computing, Web Security and Privacy, Service Orient Architecture, Data Engineering, Open Systems, Communications, Smart Wireless and Sensor Networks, Intelligent Computing in Sensor and Ad Hoc Networks, Smart Antennae, VLSI, Microelectronics, Circuit and Systems, Communication Networking and Information Security, Machine Learning, Soft Computing, Intelligent Communication Technology, Mobile Computing and Applications, Cloud Computing.

The second volume contains research topics like Software Engineering, Graphics and Image Processing, Green IT, IT for Rural Engineering, E-Commerce, E-governance, Business Computing, Business Intelligence and Performance Management, ICT for Education, IT for Inclusive Growth, UID and Transparency, Process Reengineering, Molecular Computing, Nano Computing, Chemical Computing, Intelligent Computing for GIS and Remote Sensing, Intelligent Bio-informatics, Bio Computing and Industrial Automation.

We convey our esteemed gratitude to the honourable Vice-Chancellor, Prof. (Dr.) Rattan Lal Hangloo for his extreme enthusiasm for hosting INDIA-2015 at the University of Kalyani. Also, we convey our deep sense of gratitude to the Deans, Faculty of Engineering, Technology and Management, Faculty of Science, Faculty of Arts and Commerce and Faculty of Education for their constant support and association in this big event.

We express our sincere gratitude to UGC New Delhi, India for its financial support and IEEE Kolkata Section for their technical support. We would also like to thank the programme committee members for their efforts, and the reviewers for completing a big reviewing task in a short span of time. Moreover, we would like to thank all the authors who submitted papers to INDIA-2015 and made a high-quality

technical programme possible. Finally, we acknowledge the support received from the faculty members, scholars of Faculty of Engineering, Technology and Management, officers, staffs and the authority of the University of Kalyani.

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