
Editorial

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Biographical notes: Jagdish Chand Bansal is an Assistant Professor with the South Asian University New Delhi, India. Holding an excellent academic record, he is an active researcher in the field of computational intelligence at the international level.

Kusum Deep is a Full Professor at the Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, India. Over the last 30 years, her research is increasingly well-cited making her a central international figure in the area of nature inspired optimisation techniques, genetic algorithms and particle swarm optimisation.

Atulya Nagar is Professor and Head of the Department of Mathematics and Computer Science at Liverpool Hope University, Liverpool, UK. He is an internationally recognised scholar working at the cutting edge of

theoretical computer science, applied mathematical analysis, operations research, and systems engineering and his work is underpinned by strong complexity-theoretic foundations.

Millie Pant is an Associate Professor with the Department of Paper Technology, Indian Institute of Technology Roorkee, Roorkee, India. At this age, she has earned a remarkable international reputation in the area of genetic algorithms, differential algorithms and swarm intelligence.

This special issue of the *International Journal of Artificial Intelligence and Soft Computing (IJAISSC)* is devoted to selected contributions from SocProS 2011, the first international conference on soft computing for problem solving took place at The Institution of Engineers (India), Roorkee Local Centre, Indian Institute of Technology Roorkee Campus, Roorkee during December 20–22, 2011. As the name indicates, this conference is interdisciplinary in character and brings together scientists from a wide range of fields for brainstorming on advances in computing techniques and the humbling variety, adaptability, as well as sophistication of the nature around us for inspiration and applications based on such techniques and algorithms. The guest editors feel privileged and honoured for being able to produce special issue of this very highly regarded journal.

The focal idea behind Soft Computing for Problem Solving (SocProS) conference series, which has become a flagship forum, lies in soft computing and its applications to solve diverse range of real world problems. SocProS 2011 turned out to be a unique forum of researchers and practitioners to present advances in this ever growing field. It attracts a wide spectrum of thought-provoking research papers on various aspects of soft computing with umpteen applications, theories, and techniques. The conference was graced with the keynote speeches delivered by Prof. Maurice Clerc (France); Prof. M.M. Ali (South Africa); Prof. A.K. Verma (Norway); Prof. Ashok Deshpande (India); and Prof. A.K. Nagar (UK). The conference series is going from strength to strength with the SocProS 2012 being hosted at JKLU Jaipur, India.

From a wide spectrum of interesting research papers on various aspects of soft computing, with a diverse range of simulation applications, theories, and techniques within the domain, the editors carefully selected through rigorous peer-review process, for this special issue of the *IJAISSC*, seven papers. The authors of the selected papers from the conference were invited to substantially extend and submit them for a complete new peer-review for consideration in this special issue. The final decision for the inclusion of seven papers, brief summary of these is given in the paragraph to follow, in this special issue has been strictly based on the outcome of the rigorous peer-review process.

Component-based software engineering approach has been a growing area of research recently and Bali et al. present a framework that helps decide whether to buy or to build software components while designing a fault-tolerant modular software system. They propose a fuzzy-based model for optimal component selection for a fault-tolerant modular software system under the consensus recovery block scheme. Birla and Swarup introduce fixed structure preview controllers in PSOs and present an interesting comparative analysis. An insightful application is presented by S. Chandrakanth et al. as they study the efficiency of induction motor and its sensitivity analysis for parameter variation; this is vital for implementation of efficient control schemes and their efficiency. Sharma et al. introduce power law-based local search in artificial bee colony algorithm and present some interesting benchmarking tests demonstrating some

impressive results in terms of reliability, efficiency and accuracy. In another interesting application, Aakanksha et al. apply ant colony optimisation for load balancing in mobile ad hoc networks. Rajagopalan and Mala tackle the channel allocation problem for cellular networks using evolutionary approaches. Madhuri et al.'s work in selection of an appropriate strategy for adjusting inertia weight for enhancing the performance of particle swarm optimisation (PSO) presents a way for improving the best fitness at each iteration of the PSO and thus marks a key contribution in this edited volume.

The objective of this special issue has been to make available recent results and report in-progress research in the field and we much hope that this publication will become an important reference source to many students, researchers, and academics in their educational, research, and professional activities.

As guest editors, we would like to express our deep thanks to Inderscience Publishers for providing us with the opportunity to host this special issue on SocProS 2011 in *IJAISC*. We also thank the authors for their contributions, including those whose papers were not included. Last but not least, we express our sincere gratitude for the thoughtful work of the reviewers who provided invaluable evaluations and recommendations that have helped maintain the quality and clarity of presentation of the papers.