Editorial

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Biographical notes: Himansu Sekhar Behera is working as an Associate Professor in the Department of Computer Science Engineering and Information Technology, Veer Surendra Sai University of Technology (VSSUT), Burla, Odisha, India. He has received his MTech from the NIT, Rourkela (formerly REC) and PhD in Engineering from the Biju Pattnaik University of Technology (BPUT), Odisha, India, respectively. He has published more than 80 research papers in international journals and conferences, edited 11 books and is acting as a member of the editorial/reviewer board of various international journals. He is a proficient in the field of computer science engineering and served the capacity of Program Chair, Tutorial Chair and act as an advisory member of committees of many national and international conferences. His research interest includes data mining, soft computing, machine intelligence, evolutionary computation and distributed systems.

Durga Prasad Mohapatra received his PhD from the Indian Institute of Technology Kharagpur, West Bengal, India and is presently serving as an Associate Professor in NIT Rourkela, Odisha, India. His research interests include software engineering, real-time systems, discrete mathematics, and distributed computing. He has published more than thirty research papers in these fields in various international journals and conferences. He received the Prof. K. Arumugam National Award and the Maharashtra State National Award for outstanding research work in Software Engineering for 2009 and 2010, respectively from the Indian Society for Technical Education (ISTE), New Delhi.

In the last decade, evolutionary and natural computing have experienced an incredible growth in both theoretical analyses and industrial applications. In the present scenario of computing, evolutionary computation is the collective name for a range of problem-solving techniques based on principles of biological evolution, such as natural selection and genetic inheritance. These techniques are being increasingly applied to a variety of problems, ranging from practical applications in industry and commerce to leading-edge scientific research. Starting from the genetic algorithm to the trends of the present day development, evolutionary computation has been a keen interest among all the wide variety of researchers. On the other hand, natural computing indicates to the computational processes observed in nature, and human-designed computing inspired by nature. When complex natural phenomena are analysed in terms of computational processes, our understanding of both nature and the essence of computation is enhanced. It is an emerging interdisciplinary area in which a range of techniques and methods are studied for dealing with large,

complex, and dynamic problems. The main intent of this special issue is to cover both the theory and applications of various evolutionary and natural computing techniques embedded to the diversified spanning fields of neural networks, connectionist system, artificial intelligence, fuzzy systems, etc. The issue will be helpful to promote original research articles on theoretical, experimental, and practical aspects of natural computing and evolutionary approaches.

This special issue comprises of some interesting and important articles such as: design of ANN-based adaptive hysteresis band control scheme for compensation of THD and reactive power demand in PV tied grid system using DSTATCOM, analysis to evaluate the fairness between TCP Reno and TCP Vegas in wired and wireless network, categorical data classification, handwritten character recognition using machine learning techniques, design of PID controller for automatic generation control with redox flow battery, dimension reduction for microarray data using multi-objective ant colony optimisation, adaptive weight-based bypass algorithm for L3 cache in a three level

cache hierarchy, etc. The articles are well described and are the real reflections of some recent advances of evolutionary computation, swarm intelligence and machine learning. This special issue covers both the theory and applications of the above mentioned techniques embedded to the diversified spanning fields of evolutionary computation, neural networks, wireless networks, automatic generation control, character recognition, etc. The wider use and successful applications in various diversified problem domains discussed in this special issue show the efficiency of these methods. As guest editors, we hope that spectrum of research works covered under this special issue will be of value for whole host of readers/researchers working in the domain of evolutionary and natural computing and related areas. It is important to have a good balance of different article type within the special issue. We are grateful to our authors who have contributed their valued research to this special issue and always supported us during the reviewing of the articles. The technical standards and quality of published articles in this special issue is based on the strength and expertise of the reviewer board members who have been grossly involved in providing high quality reviews for the submitted papers. Our special thanks go to the Editor-in-Chief of the *International Journal of Computational System Engineering* (*IJCSysE*), Professor Valentina E. Balas for all her continued guidance and input on the policies of the journal as well as for her volunteered significant time despite of his busy schedules. Also, we are thankful to the editorial support members and teams for their constant effort for successful publication of the issue.