
Editorial

Srikanta Patnaik*

Department of Computer Science and Engineering,
ITER Siksha 'O' Anusandhan University,
Bhubaneswar, Odisha, 751030, India
Email: patnaik_srikanta@yahoo.co.in

*Corresponding author

Jayanta Kumar Dash

HOD Mathematics,
ITER Siksha 'O' Anusandhan University,,
Bhubaneswar, Odisha, 751030, India
Email: jkdash@gmail.com

Geetanjali Panda

Department of Mathematics,
Indian Institute of Technology,
Kharagpur, 721302, India
Email: geetanjali@maths.iitkgp.ernet.in

Biographical notes: Srikanta Patnaik is currently serving as a Professor of Computer Science and Engineering, SOA University, Bhubaneswar, India. He holds a Doctor of Philosophy in Engineering from Jadavpur University, India. He has published more than 100 research papers and articles in international journals and magazines of repute. Presently, he is serving as Editor-in-Chief of two international journals namely, *International Journal of Information and Communication Technology* and *International Journal of Computational Vision and Robotics*, published from Inderscience Publishing House, England and also Editor-in-Chief of Springer Book Series on Modeling and Optimization in Science and Technology [MOST].

Jayanta Kumar Dash received his PhD in Mathematics from IIT Kharagpur, India, in 2009. Currently, he is Associate Professor and Head of the Department of Mathematics, ITER, Siksha 'O' Anusandhan University, Bhubaneswar, Odisha, India. His research interests include optimisation, numerical optimisation, optimisation with uncertainty, fuzzy set theory. He has published more than 20 research papers in international journals including FODM, JFM, OPSEARCH etc.

Geetanjali Panda received his PhD in Mathematics from Utkal University, Odisha, India, in the year 1994. Currently, she is an Associate Professor at Department of Mathematics, Indian Institute of Technology, Kharagpur, India. Her research interests include convex optimisation, numerical optimisation, optimisation with uncertainty, financial optimisation. He has published more than 60 research papers in international journals including *Annals of Operations Research*, *European Journal of Operations Research*, *Mathematical Methods of Operations Research*, *Optimization*, *Siam Journal of Control and Optimization* etc.

Optimisation is an important branch of applied mathematics. Many real life problems arising from different fields such as operations research, management science, computer science, engineering design, financial engineering, economics and biological science are being modelled through optimisation problems. On the other hand, soft computing is a term within computer science which is characterised by the use of inexact solutions to computationally hard tasks, for which there is no known algorithm. Soft computing is tolerant of imprecision, uncertainty, partial truth, and approximation. In effect, the role model for soft computing is the human mind and highly multidisciplinary in nature. It is appropriate to look into the modelling aspect of optimisation which may be used in the development of effective soft computing techniques for various applications. This special issue covers some of the optimisation techniques and modelling through soft computing.

The first paper entitled ‘Implicit finite difference solution for the magneto-hydro-dynamic unsteady free convective flow and heat transfer of a third-grade fluid past a porous vertical plate’ by Itishree Nayak, Ajit Kumar Nayak and Sudarsan Padhy reported the magneto-hydro-dynamic (MHD) unsteady flow and heat transfer of a third grade fluid passing an infinite vertical porous plate with uniform suction applied at the plate.

Second paper entitled ‘A two-stage stochastic programming optimisation for sugar-ethanol-electricity production from sugarcane: a case study of Mauritius’ by Noure-Roukayya Badurally Adam et al. presented a two-stage stochastic programming model to quantify the optimal amount of sugar, ethanol and electricity to be made from sugarcane so as to minimise total production cost, which is based on variation of prices of sugar, ethanol and electricity and energy required to produce them.

Shifali Bhargava and Dinesh K. Sharma in their paper ‘An algorithm for general multilevel linear/linear fractional programming problems’ have proposed an enumerative algorithm to find the global optima of the general multi-level linear/linear fractional programming problem in which the objective function of the first level is linear and the other levels are linear fractional and the dominance value is assigned at each level.

Mukta Goyal, Alka Choubey and Divakar Yadav in their paper entitled ‘Aggregating evaluation using dynamic weighted intuitionistic fuzzy approach for concept sequencing in an e-learning system’ have proposed a dynamic weighted concept intuitionistic fuzzy averaging operator (DWCIFA) to personalise the sequencing of learning concepts based on assessment results.

Shabnam Shakourzadeh and Mohammad Farrokhi in their paper entitled ‘Optimal gait generation for quadruped robots using mesh adaptive direct search’ have proposed the method to design an optimal gait generation for a quadruped robot with nine degrees of freedom moving in the sagittal plane using the mesh adaptive direct search (MADS) method.

Navya Mohan, and J.P. Anita in their paper entitled ‘A zero suppressed binary decision diagram-based test set relaxation for single and multiple stuck-at faults’ have presented a method for obtaining larger number of relaxed bits based on a new zero suppressed binary decision diagram (ZBDD) approach, which find major application in reducing the power consumed during testing.

Oualid Guemri et al. in their paper entitled ‘Two-stage heuristic algorithm for the large-scale capacitated location routing problem’ have proposed a new two-stage heuristic (2-SH) algorithm for the large-scale CLRP, which aims at finding high-quality solutions for very large-scale problems within a short computing time.

We are sure that the researchers working in this domain shall be benefited out of this special issue. We wish all the authors who have contributed articles in this issue a great future in their academic endeavour.