

Preface

In continuation to Issue 1 on “Optimization,” it is a pleasure to bring out Issue 2. This issue contains 8 research papers.

There are five papers in the category of Theory and Methodology. The first paper by P. S. V. Natraj and M. Arounassalame from Indian Institute of Technology Bombay, India, introduce a branch and prune algorithm for constrained nonlinear global optimization of multivariate polynomials using the Bernstein form of polynomials. Branching is done using subdivisions whereas pruning is done using John optimality conditions. The second paper is by Millie Pant et al. from Indian Institute of Technology Roorkee, India. They try to embed the parent centric approach in the mutation phase without disturbing the basic structure of DE. Based on this idea they propose two versions namely, DE with parent centric crossover and DE with probabilistic parent centric crossover. The paper by C. O. Pieume et al. from Canada, solve bi-level programming problems with multicriteria optimization problems, by introducing a new relationship between bilevel programming problems and multiobjective optimization problems. The fourth paper is by R. Mallipeddi and P. N. Suganthan from Singapore. They propose a DE algorithm with an ensemble of parallel populations in which the number of function evaluations allocated to each population is self-adapted by learning from their previous experiences in generating superior solutions. The fifth paper is by Amar Kishor et al., wherein an interactive multiobjective reliability optimization problem is solved using NSGA-II.

Under the head OR in Practice, there is an application paper by P. C. Jha et al., from University of Delhi, India. They illustrate the optimal advertising control policy for a new product in segmented market.

There are two Case Studies. The first one is by M. M. Awad from Lebanon, who has performed geographic information system (GIS) analysis using a hybrid genetic algorithm and compared the results obtained by Solver in MS Excel. A number of sites are selected as wildlife habitat locations in Lebanon in order to find the maximum area for a wildlife habitat with the lowest cost of managing the habitat. The second one is by Lisa Osadciw et al. from Syracuse University, USA. They demonstrate intelligent optimization techniques for emergency responder sensor networks.

I hope that readers will enjoy and benefit from this second issue on Optimization.

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