Special Issue on Evolutionary Computing Guest Editorial

During the past two decades there has been a phenomenal growth in research activities in what is now known as "evolutionary computation". Popular algorithms in this paradigm include genetic algorithms, evolution strategies, evolutionary programming, and genetic programming. This Special Issue of CIT contains seven articles (two invited, the rest contributed) that cover theory, algorithms, and applications of this fascinating field.

The paper by Michalewicz et al. provides an overview of the evolutionary computation field, and, with the help of three example problems, explains several important ideas that go into the building of evolutionary systems for specific applications.

Muehlenbein and Mahnig present a theoretical analysis of the behavior of a special type of evolutionary algorithm, called "factorized distribution algorithm", in the context of optimization of additively decomposed functions.

Whitley et al. present studies on whether "island model" genetic algorithms (which employ migration among subpopulations) are particularly suited for linearly separable problems.

The paper by Smith and Vavak provides an evaluation of the relative performance of a number of steady-state replacement strategies in genetic algorithms for nonstationary function optimization.

The paper by Arabas and Miazga applies evolutionary algorithms to the design of radio and microwave frequency circuits.

The paper by Testa et al. describes a real-world application of an evolutionary algorithm to solve the problem of scheduling theme park tours (an instance of the time-dependent traveling salesman problem).

Pratihar et al. present a genetic-fuzzy solution for the generation of gaits of a hexapod.

The five contributed papers were chosen out of the sixteen that were submitted. Each paper was refereed by at least two reviewers. I am grateful to the following persons for their help with refereeing:
T. Baeck, A. Bonarini, S.K. Chowdhury, D. Corne, K. Deb, D. Fogel, A. Ghosh, F. Herrera, A. Konar, K. Krishnakumar, Z. Michalewicz, J. Miller, S. Mitra, N. Pal, G. Paass, M.K. Roy, G. Rudolph, M. Schoenauer, and X. Yao.

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