

Tuning Evolutionary Algorithm Performance Using Nature Inspired Heuristics

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Abstract

Evolutionary algorithms have become an important problem solving methodology among many researchers working in the area of computational intelligence. The population based collective learning process; self adaptation and robustness are some of the key features of evolutionary algorithm when compared to other global optimization techniques. Due to its simplicity, evolutionary algorithms have been widely accepted for solving several important practical applications in engineering, business, commerce etc. However, experimental evidence had indicated cases where evolutionary algorithms are inefficient at fine tuning solutions, but better at finding global basins of attraction.

The efficiency of evolutionary training can be improved significantly by hybridization of some search procedures or incorporating some heuristics into the evolution process. In this talk, we will review how particle swarm optimization algorithm and bacterial foraging algorithm could be used to optimize the performance of evolutionary algorithms. The performance of the hybridized algorithms will be illustrated using some benchmark problems.