Special Issue

Novel Research and Application on Swarm Optimization and Bioinspired Optimization Algorithms

Message from the Guest Editors

Biological behaviors have recently been the foundation for many evolutionary optimization algorithms. One important category is swarm optimization algorithms (SOA), which are stochastic global optimization algorithms based on swarm intelligence. The major characteristic of SOA is that they do not use operators such as mutation, crossover, and replication but achieve evolution through antagonism and synergy between particles. The initial particle population is randomly generated, and each particle represents a possible solution. Through a simple and effective mechanism based on iterations of SOA, a random solution starts to form, and a global optimal solution is reached by following an optimal path and minimizing the cost. To date, SOA have been applied in many fields, such as engineering, evolutionary computing, biomedicine, navigation and communication, environmental sciences, cryptography, real time traffic control, and many more.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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