Call for Papers

Special Session on Swarm Intelligence Algorithms, Simulation, Theories and Applications

Organizers

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Scope:
Swarm intelligence refers to the problem-solving capability by taking inspiration from the collective activities of social organisms, such as like the birds, fishes, ants, bees, and bacteria. The basic operators, the life-cycle principles, the interactions between the simple-information-processing colonies, and the unique exploration and exploitation strategies can widen the insights of humans to manage the complex systems from distinct aspects. The typical swarm intelligence algorithms include Particle Swarm Optimization, Ant Colony Optimization, Bacterial Foraging Optimization, and Artificial Bee Colony Optimization, etc. The applications of those optimization algorithms are fairly vast, such as parameter optimization, job scheduling, design optimization, data mining, and pattern recognition.

The aim of this special session is to collect a series of latest advantages and contributions in theories, technologies, and simulations. Applications of those swarm intelligence algorithms are all welcome. Research topics related to this special issue include, but are not limited to, the following topics:

- Particle swarm optimization
- Bacterial colony optimization
- Artificial bee colony optimization
- Bacterial foraging optimization
- Artificial fish search algorithm
- Fireworks algorithm
- Brain storm optimization algorithm

- Swarm based multi-objective optimization algorithms
- Other swarm based algorithms

Applications of the above algorithms include but not limited to
- Large scale optimization problems
- Optimization in dynamic and uncertain environment
- Operations research,
- Planning and operations in industrial systems, transportation systems, and other systems
- Decision making
- Management optimization
- Finance and economics
- Games
- Machine learning
- Data mining and data clustering
- Image processing
- Feature selection
- Information security
- Power and energy systems
- Bioengineering
- Swarm robotics, and
- Other relating applications