

Tentative Outline

Special Thematic Issue for the journal: Recent Advances in Computer Science and Communications

Title of the Thematic Issue: "Nature-inspired algorithms and their applications"

Sectional Editor: Dr. Zheng-Ming Gao

- **Scope of the Thematic Issue:**

Along with the development of science and technology of our world, we are facing more and more complicated problems in both dimensionality and scalability. Analytical solutions might be no longer accessible, on the contrary, stochastic methods played a more important role in such conditions. Being metaheuristic, nature-inspired algorithms have been proven to be efficient and easy to find the best solutions for the most complicated problems. More than three hundred of them have been proposed, yet none of them could solve all of the existing problems causing the No Free Lunch (NFL) theorem. We are still under the demand of new algorithms, even their improvements. And more applications were introduced to verify their capabilities.

The aim of this thematic issue is to bring together the research accomplishments provided by researchers from academia and the industry. The other goal is to show the latest research results in the field of nature-inspired algorithms and understand how they work in both benchmark functions and the real-world engineering problems, including their improvements in capabilities. We encourage prospective authors to submit related distinguished research papers on the subject of both: theoretical approaches and practical case reviews.

Keywords: Nature-inspired algorithms; benchmark functions; real-world engineering problems; multi-objective optimization

Tentative titles of the articles:

- Developing a context-aware ubiquitous learning system based on a hyper-heuristic approach by taking real-world constraints into account
- Plant competition optimization: A novel meta-heuristic algorithm.
- A continuous-state cellular automata algorithm for global optimization
- Multi-objective flower pollination algorithm: a new technique for EEG signal denoising
- A harmony search algorithm for university course timetabling
- A hybrid PSO-GA algorithm for constrained optimization problems
- Convergence analysis of beetle antennae search algorithm and its applications Springer
- Equilibrium optimizer: A novel optimization algorithm
- An Improved African Vulture Optimization Algorithm for Feature Selection Problems and Its Application of Sentiment Analysis on Movie Reviews

Schedule:

- Thematic issue submission deadline: **1-6-2023**

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