IEEE Transactions on Fuzzy Systems

CALL FOR PAPERS

for Special Issue on

"Nature-inspired Optimization Methods in Fuzzy Systems"

The Theme: Nature-inspired optimization methods are a wide range of the different algorithms which are very often used to solve complex optimization problems that cannot be efficiently solved by traditional optimization algorithms. Optimization of fuzzy systems is also a complex optimization task involving both continuous, integer and combinatorial problems. For example, selection of input attributes of the fuzzy system, design of fuzzy system structure, selection of membership functions, and selection of inference operators, can be seen combinatorial optimization problems, whereas selection of the parameters in membership functions and fuzzy rules are continuous optimization problem. In addition, optimization of a fuzzy system becomes a multi-objective optimization problems when we take both interpretability and accuracy of the fuzzy systems into account. Thus, applications of nature-inspired optimization methods and their hardware implementation are of great importance.

This Special Issue on "Nature-inspired optimization methods in fuzzy systems" focuses on the development, adaptation, application and hardware implementation of the methods inspired by nature for optimization of fuzzy systems.

Topics include, but are not limited to, the following research topics:

- Genetic algorithms in fuzzy systems
- Differential evolution algorithms in fuzzy systems
- Nature-inspired optimization methods in deep neuro-fuzzy systems
- Genetic programming in fuzzy systems
- Multi-objective optimization of fuzzy systems using nature-inspired optimization methods
- Swarm Intelligence algorithms in fuzzy systems
- Nature-inspired optimization methods in type-2 fuzzy systems
- Hybrid approach of nature-inspired optimization methods in fuzzy systems
- Nature-inspired optimization methods in interpretable fuzzy systems
- Other related topics within the scope of this issue

Papers discussing new applications of nature-inspired optimization methods to fuzzy systems and the resulting new nature-inspire approaches are especially welcome. All contributions have to be original, unpublished, and not submitted for publication. Results obtained by simulations must be validated in bounds by experiments or analytical results.

Manuscript Preparation and Submission

All authors should read "Information for Authors" before submitting a manuscript at https://cis.ieee.org/publications/t-fuzzy-systems. Submissions should be through the IEEE TFS journal website http://mc.manuscriptcentral.com/tfs-ieee. Submissions should also be in the correct format https://cis.ieee.org/publications/t-fuzzy-systems/manuscript-format. **It is essential that your manuscript is identified as a Special Issue contribution: a) Ensure you choose "Special Issue" when submitting; b) A cover letter must be included which includes the title "Special Issue on Nature-inspired optimization methods in fuzzy systems".** Submissions to this Special Issue must represent original material that has been neither submitted to, nor published in, any other journal. We do not consider papers previously published in conference proceedings.

Timetable: **Deadline for manuscript submissions** **July 1, 2019**
Expected publication date (tentative) **April, 2020**

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