IEEE Computational Intelligence Magazine
Special Issue on "Complex Engineering Optimization"

Call for Papers

Aim and Scope

Evolutionary algorithms (EAs) and other meta-heuristics have shown to be powerful in solving a wide range of global optimization problems. However, most research on evolutionary optimization has been performed on a set of test problems that are believed to represent various types of hard problems for EAs to solve. This special issue aims to promote the application of EAs and other meta-heuristics to solving real-world complex engineering optimization problems, which are often characterized by the following features:

- They are subject to uncertain and changing environments;
- They are computationally expensive;
- Multiple objectives must be satisfied and multiple disciplines may be involved;
- They may consist of multiple sub-systems that interact with one another;
- They often have a high number of decision variables of both discrete and continuous nature;
- The solution space is highly constrained.

To address the above challenges, EAs and meta-heuristics must be assisted learning systems such as fuzzy systems and neural networks to deal with large amount of uncertainty. To address lack of data, advanced learning techniques such as semi-supervised and active learning will play an important role.

Papers that address one or a few of the above-mentioned challenges in solving real-world engineering optimization problems found in industries, such as aerospace, automotive, and process industries are particularly welcome. Papers report on results on benchmark problems only will not be considered.

Submission

All manuscripts should be submitted to one of the Guest Editors whose contact details can be found below. The submission deadline is **January 18th, 2013**. All submitted papers will be peer-reviewed and the review results will be noticed by **March 1st, 2013**. The final manuscript is due on **April 1st, 2013**.

Guest Editors

Prof Tianyou Chai
State Key Lab of Synthetical Automation for Process Industries
Northeastern University, China
Email: tychai@mail.neu.edu.cn

Prof Yaochu Jin
Department of Computing
University of Surrey, UK
Email: yaochu.jin@surrey.ac.uk

Prof Bernhard Sendhoff
Honda Research Institute Europe, Germany
Email: Bernhard.Sendhoff@honda-ri.de