## 2009 FUZZ-IEEE Conference Competition Call for Papers

Organized by Task Force on Competitions, Fuzzy Systems Technical Committee IEEE Computational Intelligence Society

## 1. Introduction to the 2009 FUZZ-IEEE Conference Competition

The competition challenge is to develop a fuzzy logic controller to control a simplified magnetic suspension system under different initial conditions. It is basically a nonlinear multiinput, multi-output control problem. This study will be based on computer simulation without involvement of the hardware system.

## 2. Preparing and Submitting a Competition Paper

You enter the competition by reporting your solution to this problem in a paper submitted through the conference web submission site (all the conference papers, competition or not, will be submitted through the same site). Please accompany your paper with a brief cover letter simply stating that your paper responses to the competition announcement. You will also need to submit a number of data files as well as your computer programs (see the Reporting Requirements section of the competition problem description file). Your paper will be routed to the Task Force for evaluation. A paper without such a letter will be treated by the conference as a non-competition (i.e., regular) paper. Your paper should meet all the requirements set by the conference for paper submission (e.g., paper length and font sizes). That is to say that there is no difference between a competition paper and a non-competition paper except the former is specifically written to address the competition problem.

The submission deadline for a competition paper is the same as that for a regular conference paper.

We have developed this competition problem by ourselves and have done our best to avoid errors. We have developed the competition rules below with the intention to make them comprehensive in coverage. Nevertheless, it is a learning process for us and as such, mistakes may be inevitable. If we find an error later or have to make an adjustment to the competition material posted on the conference web, we will do so and would like to inform you of any substantial change that impacts the competition. For this purpose, we ask you to send your name and email address to Professor Hao Ying (hao.ying@wayne.edu) if you decide to enter the competition so that we can keep you informed. You are encouraged to do so, but this step is optional.

## **3.** Competition Rules

In preparing your competition work, please keep the following rules in mind:

- 1. Fuzzy sets and/or fuzzy logic must be used and they must play a central role in the controller. A control solution without using them will be disqualified from the competition. Such a paper will be sent to the conference's Program Chair for his disposal.
- 2. The authors are encouraged to use MATLAB and its toolboxes to conduct the simulation study. Use of this software package, however, is not mandated.
- 3. A number of control system performance data files and all your computer programs are required to be submitted to the Task Force. They are in addition to the results displayed in the paper. See the Reporting Requirements section of the competition problem description file for details. The computer programs will be treated as intellectual property of yours and only the Task Force members will be allowed to see them. All the programs will be destroyed by using a secure data destruction software package shortly after the conference is over.
- 4. A small number of papers will be determined as the finalists by the Task Force members collectively. One of the authors of a finalist paper must attend in person a special session organized by the Task Force during the conference or the paper will be automatically disqualified for further competition consideration. Due to the budget constraint, no financial support is available from the conference to the finalists.
- 5. The author of a finalist paper will orally present the work and defend it in the session. The author will run the programs to show his/her control results. A number of Task Force members will attend the session to ask questions and examine the work in determining the competition's winners. Official certificates will be issued to the winners at the conference.
- 6. The factors involving the selection of the finalists and the winners include: (1) technical novelty with respect to the current fuzzy control literature and soundness of the proposed control solution, (2) how significant the role of fuzzy sets and/or fuzzy logic is, (3) control system's performance, (4) paper quality, and (5) oral presentation and defense quality (for the finalists only).
- 7. Accepting a competition paper as a finalist paper means that the paper has been accepted by the conference. A competition paper that is not selected as a finalist will be handed over to the conference's Program Chair who will put them into the regular peer-review process. Comments made by the Task Force members on it will not be forwarded.

For inquiries, please contact the Task Force Chair:

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4. Task Force on Competitions of the IEEE Computational Intelligence Society's Fuzzy Systems Technical Committee

The Task Force currently consists of the following members:

Hao Ying, Ph.D. (Chair), Wayne State University, USA Dimitar Filev, Ph.D. (Vice Chair), Ford Motor Company, USA Radim Belohlavek, Ph.D., Binghamton University, USA Asli Celikyilmaz, Ph.D., University of California, Berkeley, USA Xinyu Du, M.S., Wayne State University, USA Fazal U. Syed, Ph.D., Ford Motor Company, USA Haibo Zhou, M.S., Central South University, China

The membership will be expanded, if needed, to more efficiently handle the peer-review and decision-making.