# Call for Papers

Journal of Computer and System Sciences

Special Issue on

Innovative Computational Learning: Theory, Methods and Applications

**Guest Editor: Dr. Lean Yu**


Computational learning theory is an emerging and rapidly expanding research field, which examines formal models of induction with the goals of discovering the common methods underlying efficient learning algorithms. As a field with roots in theoretical computer science, the emphasis in computational learning theory is on the design and analysis of adaptive learning algorithms. This includes algorithms that learn from a supervisor, algorithms that make some future predictions based on past observations, and algorithms that learn by interacting with other fields that work on problems of classification such as applied machine learning, statistics, and information theory, as well as other areas of computer science such as artificial intelligence and complexity theory.

However, there is no consensus on the universal computational learning theory; many difficulties about some computational learning paradigms still exist. For example, in the popular neural learning paradigm, local minima and over-fitting are two deadly problems, which are not solved well in neural network learning until now. In the emerging support vector machines learning algorithm, over-fitting problem was often occurred in some practical problems in terms of literature review. For these reasons, more innovative computational learning theories and methods should be encouraged.

In order to further promote the development of computational learning theory, *Journal of Computer and System Sciences (JCSS)* will publish a special issue dedicated to the topic of "***Innovative Computational Learning: Theory, Methods and Applications***". This special issue is not to merely illustrate the superior performance of an innovative computational learning method from the systems science viewpoint, but also to demonstrate how it can be used effectively in some practical application problems. The main purpose of this special issue is to provide researchers and practitioners an opportunity to share the most recent advances in the area of computational learning theory, method and applications, to assess the state of knowledge of computational learning theory, to generate new results in this relatively under-researched area, and determine directions for further research, All submitted papers should present mathematical analysis and modeling approaches/perspectives to the proposed computational learning paradigms. The special issue is interested in topics related to all aspects of computational learning theory, methods and applications. Topics of interest include, but are not limited to, the following:

- **Innovative Computational Learning Theory:** Bio-inspired computational learning theory, Case-based reasoning and inference theory, and other new machine learning theories etc.
- **Innovative Computational Learning Methods:** Neural networks, genetic algorithms, DNA computing and artificial immune system, hybrid learning, ensemble learning, cooperative learning, competitive learning, multi-agent learning, multi-strategy learning etc.
- **Innovative Computational Learning Applications:** Prediction, classification, regression, clustering, evaluation, optimization etc.

Authors should submit their paper via email: yulean@gmail.com and the subject of the email should be: "JCSS SI Submission: Innovative Computational Learning". All manuscripts for this special issue should be submitted electronically by **October 1, 2009**.

Authors of presented papers at the CSO2009 (http://www.gip.hk/cso2009/) and BIFE2009 conference (http://www.gip.hk/bife2009/) with papers published in the IEEE Computer Society proceedings are invited to submit their extended papers with at least 30% additional materials relative to conference papers. Refereeing and the selection of all submitted papers will be carried out according to the standards of *Journal of Computer and System Sciences (JCSS)*. The editor of the special issue will make decisions on submitted papers based on referees' comments and recommendations, as well as quality and presentation of the papers. In addition, all submissions should strictly conform to guidelines of JCSS at the following web address:
http://www.elsevier.com/wps/ find/journaldescription.cws_home/622867/authorinstructions.

**Important Dates**

Full papers submission: **October 1, 2009**
Relevancy Review and Evaluation: **October 15, 2009**
First round of peer-review: **January 31, 2010**
First round revision: **March 31, 2010**
Final manuscripts ready: **May 1, 2010**
Special issue papers to the publisher: **June 1, 2010**

For editorial inquiry and correspondence, please contact the Special Issue Editor at,

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