

## ***Special Session on***

# **Evolutionary Algorithms Based on Probabilistic Models**

***IEEE CEC 2009, May 18-21, 2009, Trondheim, Norway***

Evolutionary algorithms based on probabilistic models (EAPM) have been recognized as a new computing paradigm in evolutionary computation. Instances of EAPMs include, *estimation of distribution algorithms, probabilistic model building genetic algorithms, ant colony optimization, cross entropy methods*, to name a few. There is no traditional crossover or mutation in EAPMs. Instead, they explicitly extract global statistical information from their previous search and build a probability distribution model of promising solutions, based on the extracted information. New solutions are sampled from the model thus built. EAPMs represent a new systematic way to solve hard search and optimization problems. The last decade has seen growing interest in this area. As an interdisciplinary research area, the development of EAPMs needs joint efforts from the researchers and practitioners in evolutionary computation, machine learning, statistics and simulation. This special session aims at bringing researchers who are interested in EAPM together to review the current state-of-art, exchange the latest ideas and explore future directions. The major topics of interest include, but are not limited to:

- Theory of EAPMs,
- New algorithms,
- Combination of machine learning techniques and EAPMs,
- Combination of statistics techniques and EAPMs,
- Combination other heuristics and EAPMs,
- EAPMs for multiobjective optimization problems,
- EAPMs in dynamic environments,
- Parallel implementation of EAPMs,
- Real-world/novel applications.

### **Important dates:**

Submission: **November 1, 2008.**  
Notification: **January 16, 2009**  
Camera-Ready: **February 16, 2009.**

### **Submission:**

- ***Please visit the CEC'09 web (<http://www.cec-2009.org>) for the instructions for authors.***
- ***Please select [Evolutionary Algorithms Based on Probabilistic Models](#) as your **first** choice.***
- ***Special session papers will be treated in the same way as regular papers and included in the conference proceedings.***

### **Organizers:**

#### **Dr. Qingfu Zhang**

Department of Computing and Electronic Systems,  
University of Essex, UK

<http://dces.essex.ac.uk/staff/qzhang>

email: [qzhang@essex.ac.uk](mailto:qzhang@essex.ac.uk)

#### **Prof. José Antonio Lozano**

Department of Computer and AI,  
University of the Basque Country, Spain

[www.sc.ehu.es/isg](http://www.sc.ehu.es/isg)

e-mail: [ja.lozano@ehu.es](mailto:ja.lozano@ehu.es)

#### **Prof. Pedro Larrañaga**

Department of Artificial Intelligence  
Technical University of Madrid, Spain  
[www.sc.ehu.es/isg](http://www.sc.ehu.es/isg)

e-mail: [pedro.larranaga@fi.upm.es](mailto:pedro.larranaga@fi.upm.es)

**Mr. Aimin Zhou**

Department of Computing and Electronics Systems  
University of Essex, UK

<http://privatewww.essex.ac.uk/~azhou>

email: [azhou@essex.ac.uk](mailto:azhou@essex.ac.uk)