



7th International Conference on Computational Collective Intelligence Technologies and Applications

21-23 September, 2015, Madrid, Spain



CSI 2015

Special Session on Computational Swarm Intelligence

at the 7th International Conference on Computational Collective Intelligence Technologies and Applications (ICCCI 2015)

Madrid, Spain, September 21-23, 2015

Conference website: <http://antares.sip.ucm.es/iccci2015/>

Special Session Organizers

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Research Area: Ant Colony Optimization, Particle Swarm Optimization, Artificial Bee Colony, Modern Metaheuristics

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Research Area: Ant Colony Optimization,, Modern Metaheuristics, Data Mining, Classification, Evolutionary Optimization Techniques

Computational Swarm Intelligence algorithms, often inspired by communication and interaction between social agents such as ants or bees, play important role in Artificial Intelligence. Different learning and adaptive mechanisms incorporated in these techniques (applied in real-world applications), are the research area that currently becomes the main field of Computational Collective Intelligence.

This **CSI 2015** Special Session proposes that Computational Swarm intelligence is an autonomous aggregate of techniques that so far have not been unified, especially in the context of efficient applications. We are looking for a mathematical, algorithmic framework which will enable us to understand and analyze these algorithms and the self-adaptive mechanisms and learning schemas.

The **CSI 2015** Special Session will seek to define the metaheuristics of Computational Swarm Intelligence algorithms. A common framework is desirable for a number of reasons, including the following:

- Better understanding of the learning algorithms employed for different tasks of data mining and optimization in Computational Swarm Intelligence techniques.
- Discovering the relationships between parameter values and the interactions between parts of the analyzed approaches in the context of optimization.
- Suggestions for creating novel and hybrid metaheuristics in parallel implementations as well as in new applications.

The session aims at addressing such issues from a heuristic, practical and theoretical perspectives. The following contributions are welcomed:

- Position papers and reports of work in progress
- Papers proposing and advancing the metaheuristics of popular swarm intelligence techniques such as PSO, EA, ACO, BCO and DE.
- Contributions from adjacent fields e.g. Computational Learning Models, Evolutionary Techniques, Multi-Agent Systems.

Objectives and Topics

The session will gather experts in adjacent and seemingly related fields of

- Ant Colony Optimization
- Artificial Life
- Artificial Bee Colony
- Particle Swarm Optimization
- Multi-agent systems
- Differential Evolution
- Evolutionary Techniques
- Simulated Annealing
- Recommender Systems
- Machine and Distributed Learning
- Cryptanalysis and Cryptography systems
- Information Theoretic Learning.

Important dates

Submission of papers: **20 March 2015**
Notification of acceptance: **15 May 2015**
Camera-ready papers: **15 June 2015**
Conference date: **21-23 September 2015**

Program Committee (to be invited)

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- 3. Prof. Rafael Parpinelli**
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Research Area: Ant Colony Algorithms for Data Classification, Bio Inspired Computing, Ant Colony Optimization, Swarm Intelligence, Computational Intelligence, Data Mining
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- 6. Dr. Rafał Skinderowicz**
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- 10. Dr. Bashar Al Shboul**
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Research Area: Data Mining, Machine Learning, Genetic Algorithms.

Submission

All contributions should be original and not published elsewhere or intended to be published during the review period. Authors are invited to submit their papers electronically in pdf format, through EasyChair. All the special sessions are centralized as tracks in the same conference management system as the regular papers. Therefore, to submit a paper please activate the following link and select the track: **CSI2015: Special Session on Computational Swarm Intelligence.**

<https://www.easychair.org/conferences/?conf=iccci2015>

Authors are invited to submit original previously unpublished research papers written in English, of up to 10 pages, strictly following the LNCS/LNAI format guidelines. Authors can download the Latex (recommended) or Word templates available at [Springer's web site](#). Submissions not following the format guidelines will be rejected without review. To ensure high quality, all papers will be thoroughly reviewed by the CSI 2015 Program Committee. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. The conference proceedings will be published by Springer in the prestigious series LNCS/LNAI (indexed by ISI CPCI-S, included in ISI Web of Science, EI, ACM Digital Library, dblp, Google Scholar, Scopus, etc.).