

IEEE Congress on Evolutionary Computation

May 18 – 21, 2009, Trondheim, Norway

Special Session on Computational Intelligence in Games

Special Session Organizers

Pier Luca Lanzi
Politecnico di Milano, Italy
pierluca.lanzi@polimi.it

Daniele Loiacono
Politecnico di Milano, Italy
loiacono@elet.polimi.it

Julian Togelius
IDSIA, Switzerland
julian@idsia.ch

Homepage

<http://cig.dei.polimi.it>

Important Dates

Paper Submission
1st November 2008

Notification of Acceptance:
16th January 2009

Final Paper Submission:
16th February 2009



Scope

Games are an ideal domain to study computational intelligence methods in that they provide cheap, competitive, dynamic, reproducible environments suitable for testing new search algorithms, pattern based evaluation methods or learning concepts. At the same time they are interesting to observe, fun to play, and very attractive to students.

Computational techniques have successfully been applied to many different kinds of games, however many research issues are still open. The proposed session aims at getting together leading researchers and practitioners in this field who study and apply computational intelligence methods to computer games. In the context of CEC-2009 this special session will specifically focus on those methods that in different ways exploit techniques from the area of genetic and evolutionary computation, e.g., genetic algorithms, evolutionary strategies, genetic programming, classifier systems, artificial life, artificial immune systems, etc. Topics of interest include but they are not limited to,

- * Learning and adaptation in games
- * Knowledge representation in games
- * Neuro-evolution in games
- * Coevolution in games
- * Opponent modelling in games
- * Knowledge-free and self-learning algorithms in games
- * Challenges for CI in games
- * Theoretical or empirical analysis of CI algorithms
- * Representations for games
- * Comparative studies (e.g. CI versus human-designed players)
- * Multi-agent and multi-strategy learning
- * Board and card games
- * Economic or mathematical games
- * Imperfect information and non-deterministic games
- * Evasion (predator/prey) games
- * 3D computer and console games
- * "Realistic" games for simulation or training purposes
- * Games for mobile platforms
- * Games involving control of physical objects (e.g. remote control car racing)
- * Games involving physical simulation

