

IEEE Congress on Evolutionary Computation

Trondheim, Norway, 18th-21st May, 2009

Important Dates

Paper Submission
November 01, 2008

Notification of Acceptance
January 16, 2009

Camera-Ready Submission
February 16, 2009

Organisers

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Special Session on Evolutionary Robotics

Evolutionary Robotics (ER) aims to apply evolutionary computation techniques, inspired by Darwin's principle of selective reproduction of the fittest, to automatically design the control and/or hardware of both real and simulated autonomous robots.

Having an intrinsic interdisciplinary character, ER is being employed towards the development of many fields of research, among which we can highlight neuroscience, cognitive science, evolutionary biology and robotics. Hence the objective of this special session is to assemble a set of high-quality original contributions that reflect and advance the state-of-the-art in the area of Evolutionary Robotics, with an emphasis on the cross-fertilization between ER and the aforementioned research areas, ranging from theoretical analysis to real-life applications.

Topics of interest include (but are not restricted to):

- Evolution of robots which display minimal cognitive behaviour, learning, memory, spatial cognition, adaptation or homeostasis.
- Evolution of neural controllers for robots, aimed at giving an insight to neuroscientists or advancing control structures.
- Evolution of communication, cooperation and competition, using robots as a research platform.
- Co-evolution and the evolution of collective behaviour.
- Evolution of morphology in close interaction with the environment, giving rise to self-reconfigurable, self-designing, self-healing and self-reproducing robots or humanoid and walking robots.
- Evolution of robot systems aimed at real-world applications as in aerial robotics, space exploration, industry, search and rescue, robot companions, entertainment and games.
- Evolution of controllers on board real robots or the real-time evolution of robot hardware.
- Novel or improved algorithms for the evolution of robot systems.
- The use of evolution for the artistic exploration of robot design.

Paper Submission

Submissions should follow the guidance given on the IEEE CEC 2009 conference website: www.cec-2009.org. When submitting, please select the special session on "Evolutionary Robotics". All submissions will be peer-reviewed with the same criteria used for other contributed papers. All accepted papers will be included in the published conference proceedings.

Post Conference Book Publication

Authors of the best selected paper from among those accepted for the "Evolutionary Robotics" session will be invited to submit an extended version for review for possible publication as a chapter in the forthcoming book "The Horizons of Evolutionary Robotics" edited by Patricia A. Vargas, Ezequiel Di Paolo, Inman Harvey and Phil Husbands (target publisher MIT Press).

Website

<http://lis.epfl.ch/specialsessions/CEC09/>

