

Call for papers

Special issue on “Advances in intelligent robot design for the Robocup Middle Size League”

The Robocup Middle Size league is a robot soccer competition that aims to pave the way from pure soccer simulation to autonomous humanoid robotic soccer play. In this league, the integrated, multidisciplinary design of hardware and software is the key for success. In recent years, the league made significant progress in both mechatronics hardware and embedded software design. In the expected roadmap for the coming years the soccer environment will evolve into a real outside field with ordinary grass. At the same time, the development of methodologies for team play design will rapidly proceed. Robust and high-performance locomotion for soccer play, robust vision-based world modelling, multi-robot team play in a fast dynamically changing environment are only a few of the challenges that this competition is faced with. Sharing the same objective, teams all over the world contribute to the further development of the mechatronics and software design methodologies needed for autonomous robotics.

The purpose of this Special Issue is twofold. First of all, it is a place where the latest advances in intelligent robot design for the Robocup Middle Size League will be shared. Secondly, it is meant as a state-of-the-art collection of the necessary knowledge for soccer robot design, which will hopefully appeal to all researchers in the field of autonomous robotics and even may convince them that joining the Middle Size league would provide a perfect carrier for their research.

The topics of interest include, but are not limited to, the following:

Sensors, actuators and control algorithms

Mechanical design

Robot architectures and system integration

Vision-based world modelling

Navigation and obstacle avoidance

Design of cooperative team strategy

Learning

Robot communication

Robot simulator

Real-time and concurrent programming

Articles must be based on original research, although extended versions of conference papers may be acceptable if they contain new material. Complete articles should be submitted by the deadline of September 30th 2009. Manuscripts will be subject to the full review process, with decisions expected by January 31th 2010.

Timeline

September 30th 2009, 1st submission deadline

January 31th 2010, Notification of 1st review

February 27th 2010, 2nd submission

May 31th 2010, Final notification

June 30th 2010, Final revision due

Target publication date: August 2010

Submission instructions

All manuscripts should follow the general guidelines for authors of Mechatronics. Manuscripts should not have been published or be under consideration at other journals. Please submit your paper electronically to each of the Mechatronics Special Issue Editors.

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