

Computer Vision in Robotics

Thematic Session within the VipIMAGE2009 - II ECCOMAS Thematic Conference on

Computational Vision and Medical Image Processing

Porto, Portugal, 14-16 October 2009

www.fe.up.pt/~vipimage

http://paginas.fe.up.pt/~vipimage/conference/thematic_sessions.html

Description

Vision is an extremely important sense for both humans and robots, providing detailed information about the environment. A robust vision system should be able to detect objects reliably and provide an accurate representation of the world to higher level processes. The vision system must also be highly efficient, allowing a resource limited agent to respond quickly to a changing environment. Each frame acquired by a digital camera must be processed in a small, usually fixed, amount of time. Algorithmic complexity is therefore constrained, introducing a tradeoff between processing time and the quality of the information acquired. In most robotic applications, the vision system is the main perception device and autonomous robots must be capable of using it in order to self-localize and locate the objects that they have to manipulate.

The aim of this thematic session is to discuss recent developments in all areas of Computer Vision and Image Processing related to robotic applications.

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

- Autonomous robots
- AI approaches to computer vision
- Color vision for Robotics
- Geometrical models of robotic scenes
- Image analysis and scene understanding for robotics
- 3D vision in robotics
- Motion analysis, visual navigation and active vision in Robotics
- Multi-camera sensing and Multi-target tracking applications in Robotics
- Real-time vision systems
- Robot perception and vision systems
- Self-localization using vision
- Sonar and acoustical imaging
- Soccer robot's vision

Publications

The proceedings book will be published by the Taylor & Francis Group, as happened with VipIMAGE 2007 (ISBN: 9780415457774). The organizers will encourage the submission of extended versions of the accepted papers to related International Journals; in particular for special issues dedicated to the conference. One possibility already confirmed is the International Journal for Computational Vision and Biomechanics (IJCV&B).

As what happened with VipIMAGE 2007, the organizers are going to publish a book by SPRINGER (ISBN: 978-1-4020-9085-1), under the Computational Methods in Applied Sciences series, with invited works from the most important ones presented in the conference.

Important dates

- Submission of extended abstracts: March 15, 2009
- Lectures and Final Papers: June 15, 2009

Organizers

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