

Application Form / Workshop Description



Session Title:

Vision-based Safety for Mobile Robots

Organiser(s):

Michael Nielsen, Danish Technological Institute, mlnn@dti.dk

Giulio Reina, University of Salento, Italy, giulio.reina@unisalento.it

Motivation and objective:

Robotics is moving from static shielded robots to dynamic and mobile applications where a simple laser line scanner will not provide accurate safety. Future robots will have to be able to move safely in open and unpredictable world and to share the human living space. This quite recent research topic interests an increasing number of researchers, but also some industrial companies (e.g. automotive industry, emerging service robot industry) and large civil, military and agricultural domains (e.g. rescue, dangerous interventions, exploration, precision farming). Furthermore, in manufacturing the development goes towards unshielded applications with human interaction.

The objective is to gather experts to share experiences and progress on vision-based safety technology across the robotics and industrial domains to promote knowledge transfer and find common ground.

There are several hot research topics located at the cutting edge of the state-of-the-art, e.g.:

- Robust stationary & moving obstacle detection*
- Real-time situation analysis & Future world state prediction*
- Visual Perception & Sensory-motors schema for safe navigation*
- Motion planning & Safety issue in dynamic environments*
- 2D and 3D vision-based SLAM in dynamic environments*

Approach:

The workshop will consist of oral presentations of safety technology from different domains. This will be followed by a discussion of challenges and requirements for future development within the field of safety. The workshop will also seek to connect partners for subsequent project collaboration.

Agenda of the workshop:

Please write (if possible) how you plan to structure your workshop.

09:00 – 09:05 Introduction by the moderators

09:05 – 10:00 Presentations by selected participants

10:00 – 11:00 Discussion

Speaker(s):

Achim J. Lilienthal, Associate Professor, AASS, School of Science and Technology, Örebro University

2-3 more based on abstract submission.

How can participants contribute to, and prepare for, the workshop?

Participants with experience in this topic who want to be keynote speaker are requested to send the organizers of this workshop an abstract of their proposed talk. It could be on actual development in present projects or case studies.

Other participants may have calls for projects in mind and looking for partners.

Abstracts for suggested talks should be sent to mlnn@dti.dk

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Further information:

Safe Autonomous Vehicles for Industrial Environments:

<http://aass.oru.se/Research/Learning/savie/index.html>

Ambient Awareness for Agricultural Autonomous Vehicles:

<http://www.quad-av.eu/>

Planned follow-up:

The main objective is to establish connection between people working with safety research and applications. Ideally, the outcome of the workshop will be the start of one or more new project e.g. EU projects or innovation consortia.