

IROS'06 Workshop on:

Safe Navigation in Open and Dynamic Environments Autonomous Systems v/s Driving Assistance Systems

- **Organizers :**
 - *Christian Laugier (INRIA, France)*
 - *Roland Siegwart (ETHZ, Switzerland) & Sukhan Lee (SKKU, Korea)*

- **International Program Committee :**
C. Laugier, R. Siegwart, S. Lee, H. Moradi, U. Nunes

- **Partly supported by the ICT-Asia "FACT" network on ITS**
 - *Focus on ITS (Intelligent Transport System Technologies)*
 - *Involve research teams from France, China, Korea, Japan, Singapore*
 - *URL: <http://isrc.skku.edu/fact2006>*

- **Also linked to the European Integrated Project "BACS"**
(Bayesian Approach to Cognitive Systems)

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Motivation & Objectives

- Future robots have to be able to move safely in *open & unpredictable* world
- 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 domains (e.g. rescue, dangerous interventions..)
- Several hot research topics located at the cutting edge of the state-of-the-art, e.g. :
 - *2D and 3D SLAM in dynamic environments*
 - *Robust stationary & moving obstacle detection*
 - *Real-time situation analysis & Future world state prediction*
 - *Perception & Sensory-motors schema for safe navigation*
 - *Motion planning & Safety issue in dynamic environments*
- After the workshop, we plan to publish a book within the Springer STAR series

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Workshop program

- **Opening** (*C. Laugier*) : 9:00 – 9:10
- **Session 1 : *Navigation and Mapping***
 - 9:10 – 9:40 : Wolfram Burgard (Freiburg Univ, Germany)
“Mapping and Navigation with an Autonomous Car”
 - 9:40 – 10:10 : Alexander Kleiner (Freiburg Univ, Germany)
“Reliable Real-Time SLAM within Search and Rescue Scenarios”
 - 10:10 – 10:40 : DanWei Wang (NTU, Singapore)
“Precision Mobility issues to Mobile Robotics in Outdoor Industrial Environments”
- **Coffee break : 10:40 – 11:00**
- **Session 2 : *Perception for Autonomous Vehicles***
 - 11:00 – 11:30 : Katsuhi Ikeuchi (Tokyo Univ, Japan)
“Real Image based Driving View Generation System for next Generation Traffic Experiment Space”
 - 11:30 – 12:00 : Rodrigo Benenson (INRIA Rocquencourt, France)
“Integrating Perception and Planning for Autonomous Navigation of Urban Vehicles”
 - 12:00 – 12:30 : Open discussion & Video presentation ????
- **Lunch break : 12:30 – 14:00**

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Workshop program (C'ed)

- **Session 2 (C'ed) : *Perception for Autonomous Vehicles***
 - 14:00 – 14:30 : Sukhan Lee (SKKU, Korea)
"Perceptual Behaviors for Robust Recognition of Traffic and Signs"
 - 14:30 – 15:00 : Philippe Martinet (LASMEA-CNRS, France)
"Autonomous Navigation and Platooning using Sensory Memory"
 - 15:00 – 15:30 : Dizan Vasquez (INRIA Rhône-Alpes, France)
"Motion Learning and Prediction for Vehicles and Pedestrians"
- **Coffee break : 15:30 – 16:00**
- **Session 3 : *Safe Driving & Planning in Dynamic Environments***
 - 16:00 – 16:30 : Sascha Kolski (ETHZ, Switzerland)
"Autonomous Driving in Dynamic Environments"
 - 16:30 – 17:00 : Thierry Fraichard (INRIA Rhône-Alpes, France)
"Safety in Dynamic Environments"
 - 17:00 – 17:30 : Urbano Nunes (Univ. Coimbra, Portugal)
"Tracking and Classification of Dynamic Obstacles using Laser Range Scanner and Vision"