

**ICRA2007 Workshop on
Perception, Planning and Navigation for Intelligent Vehicles**
Rome, April 14, 2007



8:30 -8:40 **Opening**

Session S1: Simulation Software and Sensors

8:40-9:00 A laser range scanner simulation for probabilistic object tracking
H. Blume and B. Heimann, U. Hannover, Germany

9:00-9:20 Object detection in biosonar based robot navigation
M. Beiji and A. Zell, U. Tuebingen, Germany

9:20-9:40 Cybernetic transportation systems design and development: simulation software
S. Boissé, R. Benenson, L. Bouraoui, M. Parent (INRIA, FR), L. Vlacic (U. Griffith, AU)

9:40-10:20 **Invited Talk**
Cybercars, mobility for everyone
Michel Parent, INRIA-Rocquencourt, FR

10:20-10:40 **Coffee Break**

Session S2: Vision-based Perception

10:40 – 11:00 Applying kalman filtering to road homography estimation
J.Klappstein, F. Stein, and Uwe Franke; DaimlerChrysler, Germany

11:00 – 11:20 Toward a comparative study of lane tracking using omni-directional and rectilinear images for driver assistance systems
S.Cheng, and M. Trivedi, U. California at San Diego, USA

11:20 – 11:40 Improved vision-based pedestrian detection system for collision avoidance
M. Sotelo, D. Fernandez, I. Parra (U. Alcalá) and E. Naranjo (CSIC), Spain

11:40 – 12:00 Stereo based pedestrian detection for collision avoidance applications
S. Nedevschi, C. Tomiuc, and S. Bota, TU. Cluj-Napoca, Romania

12:00 – 12:20 A hierarchical fuzzy integration of local and global feature-based classifiers to recognize objects in autonomous vehicles
L. Oliveira, P. Peixoto, and U. Nunes, ISR/U. Coimbra, Portugal

12:20 – 14:00 **Lunch**

14:00 – 14:40 **Invited Talk**
Holistic sensing and dynamic displays for human-centric active safety
Mohan Trivedi, U. of California at San Diego, USA

Session S3: Planning, Navigation and Control I

14:40 – 15:00 Navigation of a non-holonomic mobile robot with a memory of omnidirectional images
J. Courbon, G. Blanc, Y. Mezouar, and P. Martinet, LASMEA, FR

15:00 – 15:20 Combining probabilistic velocity obstacles and occupancy grid for safe navigation in dynamic environments
C. Fulgenzi, A. Spalanazani, and C. Laugier, INRIA, FR

15:20 – 15:40 Path planning, replanning, and execution for autonomous driving in urban and offroad environments
R. Philippsen, S. Kolski, K. Macek, and R. Siegwart, ETHZ, Switzerland

15:40 – 16:00 **Coffee Break**

Session S4: **Planning, Navigation and Control II**

16:00 – 16:20 Hybrid steering control for intelligent vehicles navigation

J. Naranjo, J. Vinuesa, C. Gonzalez, R. Garcia, T. Pedro, I. Parra, CSIC, Spain

16:20 – 16:40 Mobile mapping for autonomous navigation in urban areas

P. Bonnifait, M. Jabbour, V. Cherfaoui, G. Dherbomez, U. Tech de Compiègne, FR

16:40 – 17:00 Simultaneous localization and map building radar sensor in extensive outdoor environment: first results

R. Rouveure, P. Checchin, P. Faure, M. Monod, L. Trassoudaine, LASMEA, FR

17:00 – 17:20 Sliding mode control of a mobile robot for dynamic obstacle avoidance based on a time-varying harmonic potential field

A. Ferrara and M. Rubagotti, U. Pavia, Italy

17:20 – 17:40 Adaptive control of a class of MIMO systems using fuzzy logic with applications to tracking control of nonholonomic mobile robots

A. Zou, Z. Hou, Z. Zhao, X. Wang, and M. Tan, Chinese Academy of Sciences, PRC

17:40 – 18:00 **Panel Discussion**