

# EDITORIAL

*Dear reader,*

*You have at your desk the issue no. 3/2011 of the journal AUTOMATIKA, which contains six original scientific papers, which are extended and supplemented versions of the papers presented at the European Conference on Mobile Robots 2009 (ECMR 2009) which was held in Mlini/Dubrovnik, Croatia, on November 23-25, 2009. I would like to take this opportunity to thank Prof. Achim Lilienthal, the Program Chair, for his help on the papers selection.*

*In the first paper, **Fusing Time-of-Flight Cameras and Inertial Measurement Units for Ego-Motion Estimation**, David Droeschel et al. utilize coherence of depth and reflectance data of Time-of-Flight cameras for motion estimation, which is in turn fused with data from an inertial measurement unit. The results are benchmarked against reference poses from an accurate laser ranger finder based localization algorithm. The following paper entitled **Heuristic Loop Closing Technique for Large-Scale 6D SLAM** by Joachen Sprickerhof et al. presents a heuristic for correcting scan pose estimations after loop closing in SLAM using 3D laser scans. The results are compared to other state of the art algorithms in an urban environment and evaluated against ground truth. In the third paper, **Humanoid Gait Optimization Based on Human Data**, Sven Wehner and Maren Bennewitz analyze techniques for optimizing a given, stable gait of a humanoid robot with respect to human resemblance. The experiments were carried out with a HOAP-2 robot in simulation to demonstrate that all techniques generate a more human-like gait. The paper entitled **Dynamaid, an Anthropomorphic Robot for Research on Domestic Service Applications** by Jörg Stückler and Sven Behnke presents Dynamaid, a robot platform which has a base with four individually steerable differential wheel pairs, two anthropomorphic arms that include a gripper, and a trunk that can be lifted and twisted. With Dynamaid and their communication robot Robotinho, the authors won several competitions and an innovation award. In the following paper, **The PEIS Table: An Autonomous Robotic Table for Domestic Environments**, Enrico Di Lello and Alessandro Saffiotti present the PEIS Table, an autonomous robotic table that can be a part of a network of simpler robotic devices pervasively embedded in the domestic environment. The design is guided by a set of requirements for robotic domestic furniture that differ, to some extent, from the requirements usually considered for service robots. In the last, sixth paper, **Robots and Intelligent Environments: Knowledge Representation and Distributed Context Assessment** Fulvio Mastrogiovanni et al. introduce a formalism to encode spatio-temporal situations whose occurrences must be detected in intelligent environments. The authors discuss capabilities offered by the used Situation Definition Language with respect to a real-world scenario, and concentrate on the system ability to combine in a centralized representation information originating from distributed sources.*

*Prof. Ivan Petrović, Ph.D., Editor-in-chief*