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Editorial

TAROS2011

Dear Reader,

This special issue of *Robotics and Autonomous Systems* contains articles that are revised and extended versions of papers presented at the conference *Towards Autonomous Robotic Systems 2011* (TAROS2011), which was held in Sheffield, United Kingdom.

TAROS is currently the main UK platform to present research in autonomous robotic systems, be it materials, hardware, software, theoretical or applications of autonomous robots, even philosophical foundations of robotics. TAROS also has been adopted as the main annual event organised by the (UK) **Academic Forum for Robotics** (AFR) which is working together with the British Automation and Robotics Association (BARA) on the general mission of '*Creation and maintenance of a forum for stakeholders in UK Robotics*'. In accordance with this aim a TAROS Industry-Academia day was organised in 2011 and will be repeated at future meetings.

TAROS, which is now in its 12th edition has been started during 1997 by the late Prof. Ulrich Nehmzov in Manchester as "Towards Intelligent Mobile Robots" (TIMR). Since the first conference in Manchester, which contained just nine papers (all from the UK), the conference has constantly grown. The TAROS2011 meeting attracted 120 delegates and the proceedings [1] contained 32 full papers and 30 extended abstract which were accepted for presentations and posters. Contributions to TAROS were received from all major robotics research groups in the UK, but also increasingly from European and overseas laboratories from the East (Australia, Japan, People's Republic of China, Singapore) as well as the West (Argentina, Brazil, Mexico, USA). While retaining its focus on the UK research community, TAROS continues to gain relevance as an international conference that brings together students and senior scientists to discuss pressing questions in intelligent, autonomous robotics and to identify future research directions.

TAROS2011 included presentations on the more standard issues of sensors, sensing and SLAM, gripping and grasping, learning and motion planning but also on issues such as swarm robotics, biomimetics, medical robotics and human–robot interfacing. This volume contains revisions of the ten papers with the highest reviewer ratings; nevertheless this selection still shows the breath of current robotics research. Concerning sensors and sensing it includes tactile sensing [2], vision [3] and radar [4]; planning [5] and learning [6] are also dealt with. Different aspects of swarm robotics, specialisation [7], group size [8] and algorithm verification [9] are discussed. Human–robot interfaces are studied, with a focus on tactile feedback [10], as well as the human interpretation of robot facial expressions [11].

We are also grateful once again for the support of Springer Verlag who sponsored the Ulrich Nehmzow Best Paper Award which was awarded to G. Reina, J. Underwood and G. Brooker for their paper "Short-Range Radar Perception in Outdoor Environment", an extended version of this paper has been included in this special edition [4].

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The editors wish to extend their thanks to everyone who contributed to this special issue and we also look forward to seeing you at TAROS 2012 which will be held at, and organised by, the Bristol Robotics Laboratory in August 2012, Bristol, UK.

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