




Introduction to the Special Issue “Robotica 2016”

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Autonomous robotics has seen its popularity and application in distinct fields, namely in services and industry, increase significantly in the last two decades.

Several areas related with robotics have been addressed by the academic community and thus journals and conferences emerged to broadly disseminate the developed knowledge.

The IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC) gathers participants from academia and industry, working in the field of autonomous robot systems and related areas. It is organized since 2001 in parallel to the Portuguese Robotics Open, and aims at exploring and discussing the latest trends in research and technology in the fields of robotics and related areas.

The authors of the best papers presented at ICARSC 2016 were invited to submit extended and improved versions of their manuscripts to this “Robotica 2016” special issue.

Therefore, this special issue of the Journal of Intelligent and Robotic Systems presents the state of the art on a peer reviewed contributions from theory to prototyping, and down to final product development. The twelve papers presented in this special issue cover distinct application

topics, including the use of a flexible robotic framework for autonomous manufacturing processes, a pruning robot for vineyards, a team of aerial robotics for search and rescue operations, or the use of robotics to autonomous planetary exploration. Also addressed are methodologies for the localization of robots using SLAM and map-matching algorithms, heuristics for perception planning, techniques to assist mobile robot teleoperation, real-time recognition and pursuit in robots and power characterization of a skid-steered mobile field robot.

The guest editors would like to thank the reviewers for their efforts in reviewing the papers, and the authors of the selected papers for their positive response to the forward comments and suggestions. Also, special thanks are given to Prof. Kimon P. Valavanis for his support of this special issue, which it is hoped will constitute a valuable addition to scientific and developmental knowledge in autonomous robots.

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