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Towards Autonomous Robotic Systems

20th Annual Conference, TAROS 2019
London, UK, July 3–5, 2019
Proceedings, Part I

Springer

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Preface

This volume contains the papers presented at TAROS 2019, the 20th Towards Autonomous Robotic Systems (TAROS) Conference, held at Queen Mary University of London, UK, during July 3–5, 2019 (https://www.qmul.ac.uk/robotics/events/taros2019/).

TAROS is the longest running UK-hosted international conference on robotics and autonomous systems (RAS), which is aimed at the presentation and discussion of the latest results and methods in autonomous robotics research and applications. The conference offers a friendly environment for robotics researchers and industry to take stock and plan future projects. It welcomes senior researchers and research students alike, and specifically provides opportunities for research students and young research scientists to present their work to the scientific community.

TAROS 2019 was held at the Queen Mary University of London, the most inclusive university of its kind. The conference programme included an academic conference, industry exhibitions, robot demonstrations and a conference dinner. The program highlights included:

– Keynote lectures by world-leading experts in robotics, including lectures by Professor Veronique Perdereau from Sorbonne University, France, Dr. Francesco Nori from Google DeepMind, UK, and Professor Bruno Siciliano from the University of Naples Federico II, Italy
– An IET-sponsored evening lecture by Professor Aude Billard from the Swiss Institute of Technology Lausanne (EPFL), Switzerland
– Invited talks by Rich Walker from Shadow Robot Company, UK, and Dr Stoyan Smoukov from Queen Mary University of London, UK
– Oral presentations, covering topics of robotic grippers and manipulation, human–robot interaction, robotic learning, robot navigation, planning and safety, robotic sensing, soft robotics, mobile and industrial robots
– Poster presentations, covering topics of swarm and multi-robot system, aerial and space robotics, eversion robots, bio-inspired robots, reconfigurable robots, robot design and testing, human–robot interaction
– Presentations of the finalists of the Queen Mary UK Best PhD in Robotics Award
– Industrial and academic exhibition stands

The TAROS 2019 Organizing Committee would like to thank all the authors, reviewers, and the conference sponsors, including the IET, UK-RAS Network, The Alan Turing Institute, Institute of Applied Data Science, Queen Mary University of London, University of Nottingham (The Rolls-Royce UTC in Manufacturing and On-wing Technology), NCNR, Automata, Ocado Technology, Springer and Frontiers in Robotics and AI.

May 2019

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