

Lecture Notes in Artificial Intelligence

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Towards Autonomous Robotic Systems


23rd Annual Conference, TAROS 2022
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Proceedings


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Preface

This volume contains the papers presented at TAROS 2022, the 23rd Towards Autonomous Robotic Systems (TAROS) Conference, held at Culham Science Centre by the Remote Applications in Challenging Environments (RACE) Department of the UK Atomic Energy Authority (UKAEA), Abingdon, UK, during September 7–9, 2022 (<https://ukaeaevents.com/23rd-taros/>).

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 progress. 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 2022 was held in the Culham Science Centre, home of the UK Atomic Energy Authority, including the Remote Applications in Challenging Environments (RACE) facility, and the Joint European Torus (JET) fusion energy experiment. The papers in this volume were selected from 38 submissions, which were sent for single-blind peer review. Out of these, 14 full papers and 10 short papers were selected for the conference, which is a 63% acceptance rate. The conference programme included an academic conference, industry exhibitions, robot demonstrations, a tour of JET and the robotics facilities supporting its remote handling, and a conference dinner. The program covered robotic systems, human–robot interaction, robot navigation and planning, robot control, and industrial robots, and highlights included

- Keynote lectures by world-leading experts in robotics, including lectures by Paul Newman from the University of Oxford, UK, and Luc Jaulin from ENSTA Bretagne, France,
- An IET-sponsored evening lecture by Rob Buckingham, co-founder of OC Robotics and current head of the RACE department within UKAEA,
- Poster presentations, covering various topics of robotics, mobile robots and vehicles, robot design and testing, detection and recognition, learning and adaptive behaviors, human–robot and robot–robot interaction, and
- Industrial and academic exhibition stands.

The TAROS 2022 Organizing Committee would like to thank all the authors, reviewers, and the conference sponsors, including the UK Atomic Energy Authority, IET, and Springer for their support to the conference.

September 2022

Alice Cryer
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Contents

Robotic Grippers and Manipulation

A Distributed Approach to Haptic Simulation	3
<i>Dan Norman, William Harwin, and Faustina Hwang</i>	
A Novel Two-Hand-Inspired Hybrid Robotic End-Effector Fabricated Using 3D Printing	14
<i>Benjamin Marsh and Pengcheng Liu</i>	
Investigating the Relationship Between Posture and Safety in Teleoperational Tasks: A Pilot Study in Improved Operational Safety Through Enhanced Human-Machine Interaction	29
<i>Thomas Piercy, Guido Herrmann, Robert Skilton, Angelo Cangelosi, Marta Romeo, and Erwin Jose Lopez Pulgarin</i>	
Design and Analysis of an End Effector Using the Fin Ray Structure for Integrated Limb Mechanisms	40
<i>Jack Pledger and Mingfeng Wang</i>	
Trigger-Assisted Ambidextrous Control Framework for Teleoperation of Two Legged Manipulators	50
<i>Christopher Peers, Joseph Humphreys, Yuhui Wan, Jun Li, Jingcheng Sun, Robert Richardson, and Chengxu Zhou</i>	
Teleoperating a Legged Manipulator Through Whole-Body Control	63
<i>Joseph Humphreys, Christopher Peers, Jun Li, Yuhui Wan, Jingcheng Sun, Robert Richardson, and Chengxu Zhou</i>	

Soft Robotics, Sensing and Mobile Robots

In-silico Design and Computational Modelling of Electroactive Polymer Based Soft Robotics	81
<i>Antonio J. Gil, Rogelio Ortigosa, Jesus Martínez-Frutos, and Nathan Ellmer</i>	
Exploration of Underwater Storage Facilities with Swarm of Micro-surface Robots	92
<i>Yifeng He, Barry Lennox, and Farshad Arvin</i>	

Characterization of an Inflatable Soft Actuator and Tissue Interaction for In Vitro Mechanical Stimulation of Tissue	105
<i>Frederick Forbes, Abigail Smith, and Dana D. Damian</i>	
EMap: Real-Time Terrain Estimation	114
<i>Jacobus C. Lock, Fanta Camara, and Charles Fox</i>	
Design and Preliminary In-Classroom Evaluation of a Low-Cost Educational Mobile Robot	128
<i>Maximilian Stone, Pavel Orlov, and Ildar Farkhatdinov</i>	
Internal State-Based Risk Assessment for Robots in Hazardous Environment	137
<i>Jennifer David, Thomas Bridgwater, Andrew West, Barry Lennox, and Manuel Giuliani</i>	
Robotic Learning, Mapping and Planning	
Investigating Scene Visibility Estimation Within ORB-SLAM3	155
<i>Dominic Rugg-Gunn and Jonathan M. Aitken</i>	
Tactile and Proprioceptive Online Learning in Robotic Contour Following	166
<i>Pablo J. Salazar and Tony J. Prescott</i>	
Learning Cooperative Behaviours in Adversarial Multi-agent Systems	179
<i>Ni Wang, Gautham P. Das, and Alan G. Millard</i>	
Task Independent Safety Assessment for Reinforcement Learning	190
<i>Mark Jocas, Firas Zoghلامي, Philip Kurrek, Mario Gianni, and Vahid Salehi</i>	
Sensing Anomalies as Potential Hazards: Datasets and Benchmarks	205
<i>Dario Mantegazza, Carlos Redondo, Fran Espada, Luca M. Gambardella, Alessandro Giusti, and Jérôme Guzzi</i>	
Robotic Systems and Applications	
Integration and Robustness Analysis of the Buzz Swarm Programming Language with the Pi-puck Robot Platform	223
<i>Aiden Neale and Alan G. Millard</i>	
Implementing and Assessing a Remote Teleoperation Setup with a Digital Twin Using Cloud Networking	238
<i>Erwin Jose Lopez Pulgarin, Hanlin Niu, Guido Herrmann, and Joaquín Carrasco</i>	

Agent-Based Simulation of Multi-robot Soil Compaction Mapping	251
<i>Laurence Roberts-Elliott, Gautham P. Das, and Alan G. Millard</i>	
A-EMS: An Adaptive Emergency Management System for Autonomous Agents in Unforeseen Situations	266
<i>Glenn Maguire, Nicholas Ketz, Praveen K. Pilly, and Jean-Baptiste Mouret</i>	
Towards Scalable Multi-robot Systems by Partitioning the Task Domain	282
<i>Brendan Devlin-Hill, Radu Calinescu, Javier Cámara, and Ipek Caliskanelli</i>	
Effectiveness of Brush Operational Parameters for Robotic Debris Removal ...	293
<i>Bechir Tabia, Ioannis Zoulias, and Guy Burroughes</i>	
Automatic, Vision-Based Tool Changing Solution for Dexterous Teleoperation Robots in a Nuclear Glovebox	311
<i>Joshua Blake, Guy Burroughes, and Kaiqiang Zhang</i>	
Author Index	327