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Proceedings of the

AIRO 2023
The 10th Italian Workshop on
Artificial Intelligence and Robotics

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Preface

The goal of the Italian workshop series on Artificial Intelligence and RObotics (AIRO) is to present, discuss and assess recent advances in the deployment of Artificial Intelligence (AI) methods in Robotics. AI principles and methods play a crucial role in several areas of the robotics research (e.g. field, service, social robotics, etc.) and are pervasively exploited at various levels of robot architectures for different purposes: sensing and perception, reasoning and decision, learning, intelligent control, adaptive and social behavior, verification and validation methods, etc. Starting from these diverse -yet intertwined- research fields, the AIRO workshop series aims at providing an established long-term Italian forum where the AI community and the Robotics community may find an interesting and stimulating common ground.

This volume contains the proceedings of the 10th edition of the AIRO workshop[1], which was held on 9 November 2023 in conjunction with the 22nd International Conference of the Italian Association for Artificial Intelligence (AIxIA 2023). This edition of the workshop was organized in close synergy with the Transversal Project 4 (Adjustable Autonomy and Physical Embodied Intelligence) of the National PNRR MUR Project FAIR (Future AI Research).

The 10th AIRO workshop accepted 17 papers (13 included in this volume) involving 72 authors. The program was structured into four sections: *Social and Assistive Robotics*, *Multi-Robots*, *Robot Learning*, *Planning and Execution*. The workshop program concluded with a final panel session on *Artificial Intelligence for Robotics: Effectiveness, Limits and Prospects* organized in collaboration with SIRI (Associazione Italiana di Robotica ed Automazione). The panel, coordinated and moderated by Alberto Finzi from the AIRO side and Enrico Pagello from the SIRI side, featured invited speakers from both industry and academia: Andrea Tagliaferri (Xaba INC), Stefano Tonello (IT+Robotics), Luca Iocchi (Sapienza, University of Rome), Alberto Finzi (University of Naples Federico II), and Gloria Beraldo (ISTC-CNR).

The research topics and results presented in these proceedings illustrate the work of an active and multidisciplinary research community. They also confirm the growing interest in a forum where AI and robotics researchers can converge and find common ground.

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Workshop Organizers

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[1] https://www.airo-aixia.it/airo2023/

Workshop Organization

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