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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 aim 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 third edition of the AIRO workshop[1], which was held in Trento, Italy, on November 22-23 2018. This edition of the AIRO workshop accepted 12 papers involving 42 authors. The program was structured into three sections *Perception, Learning and Action*, *Interacting with Humans*, and *Socially Assistive Robots*. The contributions covered several aspects of AI and Robotics in the areas of Industrial, Assistive and Field robotics robot and mainly concerned with the following research topics: robot architectures, multi-agent systems, human-robot interaction, robot learing, knowledge representation, planning and scheduling, cognitive modeling, and user studies.

The program of the workshop included also a Panel Session on *AI for Robotics: issues and challenges* with speakers: *Francesco Amigoni* (Associate Professor at Politecnico di Milano), *Amedeo Cesta* (Director of Research at CNR-ISTC), *Malik Ghallab* (Emeritus Director of Research at LAAS CNRS), *Luca Iocchi* (Associate Professor at Sapienza, Università di Roma) and the keynote talk by Prof. Giulio Sandini, Director of Research at the Italian Institute of Technology (IIT) and full professor of bioengineering at the University of Genoa, titled *Humane Robots - from Robots with a Humanoid Body to Robots with an Anthropomorphic Mind*.

The research topics and the results collected in these proceedings illustrate the work of an active and multidisciplinary research community and confirm the growing interest for a forum where AI and Robotics researchers can find a common ground.

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Workshop Organizers

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[1] https://airo2018.wordpress.com/

Workshop Organization

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