

The Future is Now! Robotics, AI and Automation

Bruno Siciliano

IEEE fellow, ASME fellow, IFAC fellow
Past president IEEE robotics & automation society
Board director european robotics association
Honorary professor Óbuda University
PRISMA lab
Chair of automation engineering study course
Department of electrical engineering and information technology
Director of ICAROS center
University of Naples Federico II
Via claudio 21, 80125 Napoli, Italy
email siciliano@unina.it
<http://wpage.unina.it/sicilian>

Robotics research has advanced in the last two decades through an intensive collaboration with other disciplines and research communities. Multi-disciplinary approaches are more successful in addressing the combined issues of cognition (perception, awareness and mental models), and physical attributes (safety, dependability and dexterity) in the world of robotics. Previously separated from humans behind a fence, the new advanced robots (or cobots) are sharing our workspace and collaborating with us. Increasingly sophisticated built-in sensors enable them to see and feel the presence of humans, and avoid accidental contact. The perception of robotics technology is improving, as we experience more ways it can improve our lives. The social and medical benefits of robots, in particular, are starting to get more attention. The advent of Industry 4.0 has created a paradigm shift beyond the stereotype that jobs will be lost to Automation. In this scenario, the terms AI and Robotics are liberally used, and frequently interchanged today. However, the physical nature of a robotic system distinguishes it from the pure abstraction of AI. The future of Robotics, AI and Automation will rapidly evolve from the context of Information Technology to that of InterAction Technology. This talk will also discuss the ethical, legal, societal and economic implications of designing, realizing and using robots in our society.