



Robotics, AI and Ethics

28 November 2023 (18.00-19.30) At the Embassy of Italy, 4 Grosvenor Square, London W1K 4AE



The latest impressive advances in AI and robotics offer a unique opportunity to develop digital technologies and robotic assistants which can support people in everyday life, in education and at work, and in healthcare. However, it is imperative that such technologies are developed following ethical principles, such as transparency and fairness, for human-centred robotics and AI applications.

During this event, five scientists involved in the developments of a variety of AI and robotic systems, will show examples of applications on these intelligent technologies such as in healthcare and manufacturing, and will discuss the ethical approaches used to guarantee the safe development of human-centred systems.

Angelo Cangelosi	Organiser and Panel Chair
Sara Bernardini	Risk-aware autonomous systems
Giorgio Metta	Designing human-robot collaboration on the iCub humanoid robot
Silvia Chiappa	Causality and AI
Rita Cucchiara	Detecting fakes and hallucinations for responsible generative AI

Acknowledgements

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Abstract of Sara Bernardini's talk:

Autonomous systems are deployed almost daily within safety-critical applications, including self-driving vehicles, autonomous undersea and aerospace systems, and service robotics. Excessive risk taken by these algorithms can lead to catastrophic failure of the overall system and may put human life in danger. To overcome these problems, risk-aware autonomous systems account for uncertainty and risk of failure during their online execution, proactively quantifying and mitigating risks against task goals and safety constraints.

Bio: Sara Bernardini is Professor of AI at Royal Holloway University and University of Rome "La Sapienza" and Principal Research Scientist at the UK National Oceanography Centre.

Abstract of Giorgio Metta's talk

One of the main goals of human-robot collaboration is to achieve a mutual adaptation of behaviours and goals. In this talk, I present our approach to AI for human-robot collaboration using the iCub humanoid robot, a platform that offers rich perceptual and motor capabilities. I discuss the challenges and opportunities that AI for human-robot collaboration poses, and outline some of the future directions that we plan to pursue.

Bio: Giorgio Metta is the Scientific Director of the Istituto Italiano di Tecnologia (IIT). He was previously with the University of Genoa, University of Plymouth and at the University of Manchester. He recently was one of the authors of the Italian Strategic Agenda on AI.

Abstract of Silvia Chiappa's talk

Of particular importance in societally impactful domains such as medicine, science, and policy making, is the ability to correctly reason about causes and effects. Current AI systems, including powerful large language models, are still limited in terms of causal reasoning capabilities. In this talk, I will discuss the role and current status of causality in AI, and suggest some paths forward.

Bio: Silvia Chiappa is a Research Scientist at Google DeepMind, where she leads the Causal Intelligence team, and Honorary Professor at University College London.

Abstract of Rita Cucchiara's talk

Multimodal Generative AI is exploding due to the effectiveness in generating text and visual data from a given prompt. The talk will address some issues for a Responsible Adoption of Gen AI in societies and industries and in particular as i) measuring the quality of generated image and text regarding possible hallucinations, ii) detecting fake visual data also in case of absence of watermarking and ii) some results for trustworthy AI

Bio: Rita Cucchiara is Full Professor at University of Modena and Reggio Emilia, Italy. Former Director of CINI Lab AIIS, she is in the Board of Director of Foundation FAIR and of IIT and collaborates with Italian Presidency of Ministers for AI.

Panel Chairing by Angelo Cangelosi

Bio: Angelo Cangelosi is Professor of Machine Learning and Robotics at the University of Manchester (UK) and co-director and founder of the Manchester Centre for Robotics and AI. He holds a European Research Council (ERC) Advanced grant.