Preface

The Workshop "From Objects to Agents" (WOA) continues to be the leading forum for Italian researchers active in the field of Agents and Multi-Agent Systems (MAS). Since its inaugural meeting in Parma in 2000, WOA has grown significantly, becoming an essential platform for fostering dialogue, sharing advancements, and bridging theory and practice in MAS research. With each iteration, WOA solidifies its international relevance, attracting contributions and participants from diverse backgrounds and interests.

The 2025 edition of WOA, hosted at Department of Economics and Management (DEM), University of Trento, explored the timely and provocative theme of "New Challenges on Autonomous Agents and Decision-Making". Autonomous agents are reshaping how decisions are made across various critical sectors, including finance, healthcare, and robotics. Their growing capacity to operate independently, learn from interactions, and adapt dynamically is pushing the boundaries of traditional decision-making processes. This evolution necessitates an active discussion about balancing efficiency with appropriate human oversight, addressing new challenges, and setting pathways for future research.

The workshop program was thoughtfully structured to highlight both theoretical and practical advancements, with three distinguished keynote speakers providing insightful perspectives. Stefano Borgo's keynote on "Humans, Robots, and their Ontologies: From Figuring Things Out to Teaming Up" set the foundational discussion on agent-human interactions and collaborative ontologies. Sarah Crockford delivered an engaging exploration into the explainability of Large Language Models (LLMs), underscoring the interpretability of embedding spaces. Chiara Ghidini, in the traditional "Fabio Bellifemine" keynote, discussed the intersection of AI-augmented process mining and agent-based systems, highlighting promising research avenues for MAS.

An essential component of WOA 2025 was the mini-school, held on July 2, which introduced participants to cutting-edge methods in agent technology. Gianluca Aguzzi provided a hands-on tutorial on developing autonomous agents with LLMs using LangChain, while Daniela Briola explored the use of intelligent autonomous agents as avatars in virtual reality environments, integrating MAS methodologies with VR technology. Giovanni Ciatto and Matteo Magnini delivered an insightful session on the integration of symbolic and sub-symbolic AI, followed by Giovanni De Gasperis' practical session on the DALI logic multi-agent framework.

Technical sessions featured high-quality contributions, with 9 main-track papers published in CEUR under the AIxIA series. Additionally, 4 dissemination papers were presented, offering valuable insights into practical applications and ongoing projects. Significantly, many contributions focused on the use of Large Language Models, confirming the growing interest and relevance of this area within the Italian MAS community. Papers discussed advances in cognitive architectures, sustainable systems, intelligent knowledge representation, and decentralized systems.

The workshop was enriched by a lively panel discussion entitled "Agents vs. LLMs" where experts debated the evolving roles of traditional agent-based systems and LLM-driven technologies. The panel, chaired by Giovanni Ciatto, tackled fundamental questions on the definition of agency, the integration of sub-symbolic and symbolic approaches, and the methodological challenges faced by researchers developing trustworthy and explainable autonomous systems.

We extend heartfelt gratitude to the organizers – in particular to Sara Chinellato –, speakers, panelists, session chairs, and all participants for their enthusiasm and contributions. We also appreciate the efforts of the WOA Steering Committee, and the DEM at the University of Trento for hosting the event.

We invite all participants to continue this productive dialogue, which is vital for advancing the future of autonomous agents and multi-agent decision-making.

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Giovanni Ciatto
Enrico Blanzieri
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