ALLEGATO C

CURRICULUM VITAE

FORMATO EUROPEO PER IL CURRICULUM VITAE

INFORMAZIONI PERSONALI

Nome e Cognome	Alessandro Trapasso
Incarico attuale	Ph.D. student in Engineering in Computer Science at Sapienza University of Rome

ISTRUZIONE E FORMAZIONE

• Date (da – a)	08/01/18 - 31/03/21
• Nome e tipo di istituto di istruzione o formazione	DiPARTiMENTO Di iNGEGNERiA INFORMATiCA, AUTOMATiCA E GESTiONALE (DIAG)/SAPiENZA UNiVERSiTY OF ROME/ITALY
• Qualifica conseguita	Master's Degree in Engineering in Computer Science

MADRELINGUA

Italiana

ALTRE LINGUE

Inglese

• Capacità di lettura	Eccellente.
• Capacità di scrittura	Buono.
• Capacità di espressione orale	Buono.

ALTRO (PARTECIPAZIONE A CONVEGNI, SEMINARI, PUBBLICAZIONI, COLLABORAZIONI A RIVISTE,ECC. ED OGNI ALTRA INFORMAZIONE CHE IL COMPILANTE RITIENE DI DOVER PUBBLICARE)

- Ph.D student in Engineering in Computer Science Rome, Italy
DiPARTiMENTO Di iNGEGNERiA INFORMATiCA, AUTOMATiCA E GESTiONALE (DIAG)/SAPiENZA UNiVERSiTY OF ROME/ITALY Nov. 2021 - Present

• Topic: Integrating Planning and Reinforcement Learning in Multi-Agent Systems with Reward Machines

• PhD Supervisor: Fabio Patrizi/Luca Iocchi

• Member of Labrococo

• Member of WhiteMech

- Ph.D visiting period (Integration planning and learning in Multi-Agent Systems) Barcellona, Spain
DEPARTAMENT DE TECNOLOGiES DE LA INFORMACiÓ i LES COMUNiCACiONS/UPF UNiVERSiTY/BARCELONA, SPAiN May. 2023 - Dec.2023

• Supervisor: Anders Jonsson

• AI-ML LAB

RESEARCH SCHOLAR May. 2021 - Sep. 2021

• Developed an environment for the European project BUBBLES in which it is possible to generate safe trajectories for UAVs through the use of
Reinforcement Learning algorithms, with rewards specified through temporal logics. The risks of collision are eliminated.

• Third Place, Best System Demonstration for the demo Unified Planning: A Python Library Making Planning Technology. Singapore - (Virtual)
2ND INTERNATiONAL CONFERENCE ON AUTOMATED PLANNiNG AND SCHEDULiNG (ICAPS 2022). Jun. 2022
A. Micheli, A. Arnold, A. Bit-Monnot, L. Bonassi, L. Framba, A. Gerevini, S. Satchi, M. Helmert, F. Ingrand, L. Iocchi, U. Köckemann, O. Lima, F. Patrizi, F. Pecora, G. Poveda, G. Röger, A. Saetti, A. Saffiotti, E. Scala, I. Serina, S. Stock, F. Teichteil-Koenigsbuch, A. Trapasso and P. Traverso and A. Valentini

TEACHING ACTIVITIES

• Tutor for Reasoning Agents 2023-2024 (module of Electives in AI, MARR)

• Tutor for Reasoning Agents 2022-2023 (module of Electives in AI, MARR)

• Part of the organization: Reinforcement Learning Summer School, June 26th to July 5th, 2023, Barcelona

REVIEWING ACTIVITIES

• Reviewer for AAMAS 2025, the 24th International Conference on Autonomous Agents and Multiagent Systems

• Reviewer for AAAI 2025, the 39th Annual AAAI Conference on Artificial Intelligence

• ICAPS 2024, the 34th International Conference on Automated Planning and Scheduling

• Reviewer for the 21st International Conference on Service-Oriented Computing, ICSOC 2023

•Reviewer for AIRO 2023 the 10th Italian Workshop on Artificial Intelligence and Robotics, with the 22nd Inter-
national Conference of the Italian Association for Artificial Intelligence (AI*IA 2023).

MAJOR COLLABORATIONS

AIPlan4EU - Unified Planning Rome, Italy
PH.D iN ARTiFiCiAL INTELLiGENCE Nov. 2021 - Present

• During my PhD I’m contributing to developing the Unified Planning library, mainly developing the multi-agent part. AIPlan4EU main objective is to make planning technology accessible to practitioners, companies, SMEs and innovators so that they can use the framework in real scenarios. With the UP library, it is possible to create a

single-agent problem and extend it to a multi-agent problem by simply defining the environment and the agents and associating fluents and actions with the agents. Finally, through the up library, it is possible to generate pairs of MA-PDDL files (domain and problem) for each agent and generate a plan through integrated planners.

Publications

• Towards Multi-Agent Model-Based Reinforcement Learning in Discrete Non-Markovian Reward Decision Processes
AAPEI ’24: 1st International Workshop on Adjustable Autonomy and Physical Embodied Intelligence, ECAI 2024
A. Trapasso, M. Bavaro, F. Amigoni, L. Iocchi and F. Patrizi

• "Unified Planning: Modeling, Manipulating and Solving AI Planning Problems in Python." *SoftwareX*
A. Micheli, A. Bit-Monnot, G. Roger, E. Scala, A. Valentini, L. Framba, A. Rovetta, ***A.* Trapasso**, L. Bonassi, A. Gerevini, L. Iocchi, F. Ingrand, U Kockemannn, F. Patrizi, A. Saetti, I. Serina, S. Stock

• A novel algorithm for parallelizing actions of a sequential plan. Prague, Czech Republic
11TH ICAPS 2023 - WORKSHOP ON PLANNiNG AND ROBOTiCS July 9 - 10, 2023
S. Santilli, **A. Trapasso**, L. Iocchi and F. Patrizi.

• A formalization of multi-agent planning with explicit agent representation. Tallinn, Estonia
38TH ACM/SINGAP - SYMPOSiUM ON APPLiED COMPUTiNG - SAC 2023 March 27 – April 2, 2023
A. Trapasso, S. Santilli, L. Iocchi and F. Patrizi.

• Modelling automated industrial experiments as incremental diverse AI planning problems. Udine, Italy
AIRO, 21ST INTERNATiONAL CONFERENCE
OF THE ITALiAN ASSOCiATiON FOR ARTiFiCiAL INTELLiGENCE (AIXIA 2022). Dec. 2022
A. Lomuscio, F. Rrapi, P. Esposito, S. Santilli, **A. Trapasso**, L. Iocchi, F. Patrizi and F. Zonfrilli.

• Mixed Human-UAV Reinforcement Learning: Literature Review and Open Challenges. Toulouse, France
IN THE INTERNATiONAL CONFERENCE ON COGNiTiVE AiRCRAFT SYSTEMS (ICCAS), 2022. Jun. 2022
N. Brandizzi, D. Brunori, F. Frattolillo, **A. Trapasso**, and L. Iocchi

Projects

Multi-UAV reinforcement learning with temporal and priority goal Master Thesis
PYTHON, OPENAI GYM, NUMPY, REiNFORCEMENT LEARNiNG, TEMPORAL LOGiCS, DOCKER Jul. 2020 - Mar. 2021

• Developed a multi-agent environment in which each agent achieves the objectives respecting the specific temporal logic. If there is a conflict between agents policies, the conflict is resolved in favour of the agent who has a higher priority target. Reinforcement Learning agents learn a policy that satisfies the time objectives specified by temporal logics (LTLf / LDLf).