



Roberto Cipollone

ISTRUZIONE E FORMAZIONE

[11/2020 – Attuale]

Ph.D. student in Engineering in Computer Science

La Sapienza Università di Roma

Città: Roma

Paese: Italia

Campi di studio: Tecnologie dell'informazione e della comunicazione (TIC)

- Member of the WhiteMech research group: <https://whitemech.github.io/>
- Advisor: Prof. Giuseppe De Giacomo
- Enrolled to the third, and last year.
- Main research topics:
 - Reinforcement Learning theory;
 - Deep Reinforcement Learning;
 - Hierarchical abstractions in Reinforcement Learning;
 - Interpretability and trustworthiness via Hierarchical abstractions in Deep Reinforcement Learning.

[01/2016 – 10/2020]

Master of Science in Artificial Intelligence and Robotics

La Sapienza Università di Roma

Città: Roma

Paese: Italia

Campi di studio: Tecnologie dell'informazione e della comunicazione (TIC)

Voto finale: 110 /110 with honors

Tipo di crediti: CFU **Numero di crediti:** 120

Tesi: Symbol Grounding in Deep Reinforcement Learning agents for non-Markovian rewards

Artificial Intelligence, Robotics and control, Machine Learning, Deep Learning, Deep Reinforcement Learning.

Thesis supervisor: Prof. Giuseppe De Giacomo.

Thesis topics: Deep Reinforcement Learning, Symbol Grounding, Temporal logics.

[09/2012 – 12/2015]

Ingegneria informatica e automatica

La Sapienza Università di Roma

Città: Roma

Paese: Italia

Campi di studio: Tecnologie dell'informazione e della comunicazione (TIC)

Voto finale: 110 e lode /110

Tipo di crediti: CFU **Numero di crediti:** 180

Tesi: Project of a digital PID controller for quadcopter pose stabilization from gyroscopic and accelerometric measures

Fundamental engineering courses, programming, control theory.

Thesis supervisor: Prof. Alessandro de Luca.

COMPETENZE LINGUISTICHE

Lingua madre: italiano

Altre lingue:

inglese

ASCOLTO B2 LETTURA C1 SCRITTURA C1

PRODUZIONE ORALE B2 INTERAZIONE ORALE B2

Livelli: A1 e A2: Livello elementare B1 e B2: Livello intermedio C1 e C2: Livello avanzato

COMPETENZE DIGITALI

Programming Languages

C++ | C | Matlab | Bash | Python | JavaScript | Simulink | HTML | OpenGL | Java

Deep Learning

Tensorflow | Pytorch | Keras | Pandas | AWS | PyTorch | Docker | Scikit-Learn
| Numpy | OpenCV

Productivity

TikZ | Linux | Git | Microsoft Office | LaTeX

PUBBLICAZIONI

[2023] [Exploiting Multiple Abstractions in Episodic RL via Reward Shaping](#)

Riferimento: Roberto Cipollone et al. In AAAI 2023, pp. 7227–7234.

Full reference:

Roberto Cipollone, Giuseppe De Giacomo, Marco Favorito, Luca Iocchi, and Fabio Patrizi. "Exploiting Multiple Abstractions in Episodic RL via Reward Shaping". In: Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI). AAAI Press, 2023, pp. 7227–7234.

[2023]

Provably Efficient Offline Reinforcement Learning in Regular Decision Processes

Riferimento: Roberto Cipollone et al. NeurIPS 2023. To appear

Full reference:

Roberto Cipollone, Anders Jonsson, Alessandro Ronca, and Mohammad Sadegh Talebi. "Provably Efficient Offline Reinforcement Learning in Regular Decision Processes". In: Proceedings of Neural Information Processing Systems (NeurIPS). 2023. To appear

[2023] [Beyond Markovian RL: Efficient Offline RL in Regular Decision Processes](#)

Riferimento: Roberto Cipollone et al. EWRL 2023.

Full reference:

Roberto Cipollone, Anders Jonsson, Alessandro Ronca, and Mohammad Sadegh Talebi. "Beyond Markovian RL: Efficient Offline RL in Regular Decision Processes". In: European Workshop on Reinforcement Learning (EWRL). 2023.

CONFERENZE E SEMINARI

[06/2023 – 06/2023] **Reinforcement Learning Summer School** Barcelona, Spain

I held a practical session on dynamic programming.

Link: <https://rlsummerschool.com/program/>

[12/2022 – 12/2022] **Seminar at the AIML group, UPF, Barcelona** UPF, Barcelona, Spain

I presented my paper "Exploiting Multiple Abstractions in Episodic RL via Reward Shaping" to the AIML research group at UPF, Barcelona

ATTIVITÀ ACCADEMICHE

Program Committees

PC member for the GenPlan workshop, at NeurIPS 2023.

PC member for the AIRO workshop, at AlxIA 2023.

Reviewer

I served as reviewer for these major conferences in AI:

ICSOC 2023, ECAI 2023, IJCAI 2023, ICAPS 2023, AAMAS 2023, IJCAI 2022.

Organizer

Second MultiTrust workshop 2023, at HAI 2023.

Organizer. Link: multitrust.github.io/2ed.

Reinforcement Learning Summer School 2023

Member of the organizing team. Link: rlsummerschool.com/contacts/.

INSEGNAMENTO

[01/2020 – 01/2022] **Teaching assistant for the course "Tecniche di programmazione"**

"Tecniche di programmazione" is a Bachelor's course at La Sapienza University of Rome.

Topics: C programming and data structures.

PARTECIPAZIONE A EVENTI

Selected conferences and events

NeurIPS 2023, ECAI 2023, EWRL 2023, RLSS 2023, AAAI 2023, IJCAI-ECAI 2022, ESSLLI 2021, KR 2021.

Selected courses

Type: PhD level course

Title: Advanced Topics in RL: From Theory to Practice

Instructor: Prof. Roberto Capobianco

Topics: Recent Deep Reinforcement Learning algorithms and methods.

SPECIFIC RESEARCH EXPERIENCE

Deep Reinforcement Learning (DRL), Multi-Agent RL (MARL), AI trust

Previous experience in DRL is demonstrated by:

- the original published work "Exploiting Multiple Abstractions in Episodic RL via Reward Shaping", AAAI 2023;
- the participation as co-organizer and attendee to the Reinforcement Learning Summer School;
- the attendance to the PhD course "Advanced Topics in RL: from theory to practice".

Previous experience in the topics "Trustworthy AI in mixed human-AI teams" is demonstrated by the organization of the Second MultiTrust workshop 2023. This workshop has been accepted at the International Conference on Human-Agent

Interaction (HAI 2023) and its call for contributions involves the topics of trust in human-AI teams, definitions of trust in AI teams and its possible measures.

One of my current research activities deals with extending the paper "Exploiting Multiple Abstractions in Episodic RL via Reward Shaping" to the multi-agent setting. This ongoing research paper will constitute a contribution in the field of Multi-Agent RL.

Autorizzo il trattamento dei miei dati personali presenti nel CV ai sensi dell'art. 13 d. lgs. 30 giugno 2003 n. 196 - "Codice in materia di protezione dei dati personali" e dell'art. 13 GDPR 679/16 - "Regolamento europeo sulla protezione dei dati personali".