

Giovanni Grotto

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EDUCATION

Teaching Assistant – Algorithms & Data Structures

Bologna | Sep 2025 - Sep 2026

Msc in Artificial Intelligence

Avg Grade: 29/30 Bologna | Sep 2023 - March 2026

Focus: Statistical Mathematical Methods, Deep Learning, Computer Vision, Machine Learning, NLP, RL

Master's thesis: Enhancing Agent Creativity through Reinforcement Learning.

Bachelor's of Computer Science

Bologna | Sep 2019 - Mar 2021

Thesis: Analysis and evaluation of online advertising to extract which was the most impacting feature on performance

WORK EXPERIENCE

CYENS - CENTRE OF EXCELLENCE | RESEARCH INTERN

Cyprus | Sep 2024 - Jan 2025

Reinforcement Learning for Quadrupedal Robot Unitree A1 extreme movements:

- Trained a policy using **PPO** and **student-teacher distillation** to enable a robot to perform **extreme movements**, such as jumping, crawling, and object avoidance, using only **depth image** as **input**.
- Designed and implemented terrains with moving obstacles in **Isaac Gym**, achieving a **2x simulation speedup** by optimizing obstacle motion updates.

HUAWEI | RESEARCH INTERN - PART TIME

Italy | Mar 2024 - June 2024

Deep learning models for metasurface design:

- Designed and implemented a **pipeline** to run simulations **automatically**, achieving a **6x speedup** in dataset generation by creating a **Python** wrapper for classical linear solvers as well as advanced solvers that utilize **torch** and **JAX**.
- Replaced traditional linear solvers with **CNN(EfficientNet, ViT)** models built from scratch in **Pytorch**, **increasing speed** by a factor of **1 million** and **improving the accuracy** of previous models by **200 times**.
- Created a **UNet** base **diffusion model** for the design of metasurfaces that generates results with a **MSE** of **0.01** beating the previous system based on **GANs** by **40%**.

WEBRANKING | R&D ENGINEER

Italy | Sep 2022 - June 2023

- Optimized an existing SQL pipeline, reducing its **computational cost** by **70%** while maintaining the **same predictive performance** of the model estimating future client purchase probabilities.
- Developed an internal chatbot, the bot answer people question using internal documentation, vector db like **qdrant**, **langchain** and **LLMs** and **embeddings** from OpenAI and **HuggingFace**.
- Realized different tools using **docker**, **react** and **django** to support SEO team that take care of **site indexing**, recover information about keyword from **API**, save them in **AWS** and execute **anomaly detection** on keyword results.

OPEN SOURCE

PETTINGZOO

PettingZoo is a repo with 2k stars maintained by [Farama Foundation](#) and originally created by [OpenAI](#), it is the standard for **Multi Agent Reinforcement Learning**.

Optimized and **refactored** tests, **reducing** run-times from **30 to 15 minutes**; **identified** and resolved **bugs** in various environments; and **improved documentation** for environment configurations to enhance clarity and usability.

PROGRAMS & COMPETITIONS

- Participated in the ICPC-**SWERC**, a **competitive programming** competition featuring the top teams from universities all across **Europe** (2021-2022). Only the **9 best students** from each university are selected to compete.
- **Mediterranean Machine Learning Summer School (M2L)** – organized by researchers from Google DeepMind to promote young talent in AI research foster discussions on state-of-the-art developments in machine learning. Accepted as a Master's student in a highly selective program primarily intended for PhD students (8% acceptance rate for Master's level applicants).