

# Marco Praticò

## Curriculum Vitae

Computational Statistics and Machine Learning (CSML)

Italian Institute of Technology

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📧 @marcopra **in** LinkedIn **S** Scholar

## Education

- 2024–present **PhD, Applied Mathematics**, *Italian Institute of Technology*, Genoa, Italy.  
Research in Reinforcement Learning algorithms for improving sample-efficiency and multi-task learning.
- 2021–2023 : **MSc, Computer Engineering**, *Politecnico di Torino*, Turin, Italy.  
Grade: *Magna cum laude*  
Thesis: "*Towards Autonomous Robotic Spray Painting with Unsupervised Reinforcement Learning*"
- 2018–2021 : **BSc, Electronic Engineering**, *Politecnico di Torino*, Turin, Italy.

## Publications

### In Conference Proceedings

- 2024 Pietro Novelli, **Marco Praticò**, Massimiliano Pontil, and Carlo Ciliberto. In *Operator World Models for Reinforcement Learning*. Neural Information Processing Systems (NeurIPS), 2024.

## Research Experience

### Italian Institute of Technology

- 2024 **Research Fellow**, *Italian Institute of Technology*, CSML group.
- Advisor : **Prof. Massimiliano Pontil**, *PI*, Italian Institute of Technology & Associate Professor, AI Center, University College of London ([Personal Web-page](#))

### Politecnico di Torino

- 2022 – 2024 **RoboTO**, *Politecnico di Torino*, Student team.  
Student team involved in [RobomasterNA competition](#). I was the supervisor of the projects "Auto-aim system with Deep RL" and "Autonomous navigation system with Deep RL".
- 2023 **Thesist Student**, *Politecnico di Torino*, [Vandal](#) Group.  
Development of my master thesis "*Towards Autonomous Robotic Spray Painting with Unsupervised Reinforcement Learning*".
- Advisor : **Prof. Tatiana Tommasi**, Associate Professor, Department of Control and Computer Engineering, Politecnico di Torino ([Personal Web-page](#))
- Prof. Raffaello Camoriano**, Assistant Professor, Department of Control and Computer Engineering, Politecnico di Torino ([Personal Web-page](#))

## Academic Projects

### Politecnico di Torino

- 2023 **Towards Autonomous Robotic Spray Painting with Unsupervised Reinforcement Learning**, *MSc Thesis*, [Vandal](#) Group.  
Conducted research on leveraging *Unsupervised Reinforcement Learning* to pre-train policies, enhancing the sample efficiency of fine-tuning for generating target-coverage trajectories. Focused on robotic spray painting within coverage path planning, optimizing trajectory generation for surface coverage
- 2023 **AI Talk - Reinforcement Learning**, *Conference speaker*.  
I was a speaker at the [Reinforcement Learning conference](#) at Politecnico di Torino. This conference has been conducted in collaboration with [DataPizza](#), [Aiko](#) and [RoboTO](#) Student Team. [Link to conference recording](#)

- 2023 **Sim-to-Real transfer of Reinforcement Learning policies in robotics using SAC.**  
Study the basics of Sim-to-Real transfer of policies using a custom Sim-to-sim environment. [Link to GitHub project](#)
- 2022 **Development of Spiking Neural Networks using Rust.**  
Development of a *Rust* library for efficiently implementing spiking Neural Networks. [Link to GitHub project](#)
- 2021 – 2022 **Adversarial Attacks and Toggle Activity on a Deep Neural Network, CAD Group.**  
We studied the effects of adversarial attacks on a deep neural network and how this affects the network's "toggle activity", a newly proposed method to measure the changing of the neuron's output. [Link to GitHub project](#) | [Link to report](#)
- Advisor : **Prof. Edgar Ernesto Sanchez Sanchez**, Associate Professor, Department of Control and Computer Engineering, Politecnico di Torino ([Personal Web-page](#))

## Computer skills

Programming Languages	Python (PyTorch, JAX, NumPy), C, C++, Java, MATLAB, Rust
Web Technologies	HTML 5, Javascript, CSS
Database	SQL, MySQL
Hardware	VHDL
Markup Language	L <sup>A</sup> T <sub>E</sub> X
Operative Systems	Windows, MacOS, Linux

## Advisors

**Prof. Massimiliano Pontil**  
*Italian Institute of Technology*  
*AI Center, University College of London*  
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**Prof. Carlo Ciliberto**  
*AI Center, University College of London*  
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