

# Vassili De Palma

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## Education

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**ETH Zürich**, MSc Data Science, Minor in Robotics, Zurich 09/2025 – Present

- Coursework: Advanced Machine Learning, Probabilistic AI, Large Language Models, Large-Scale AI Engineering, Robot Learning, 3D Vision, Advanced Algorithms, Big Data.

**Politecnico di Milano**, BSc Mathematical Engineering, Milan 09/2022 – 07/2025

- Graduated 110/110 *cum laude*. Best Freshman Award (top first-year performance); full merit-based tuition waiver in all three years.

**Hong Kong University of Science and Technology**, Exchange semester, Hong Kong 09/2024 – 12/2024

- Full merit scholarship; one of four students selected university-wide. Projects on near-stable matching for ride-sharing (Prof. Jin Qi) and American option pricing with LSMC and neural networks (Prof. Xiaowei Zhang).

## Experience

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**Teaching Assistant**, ETH Zürich 09/2026 – Present

- TA for *Building ML/AI Applications* and *AI in Industry*.
- Workshops at the Swiss National Supercomputing Centre (CSCS).

**Industry Challenge**, Inditex & ETH AI Center, Zurich 09/2026 – Present

*SmartCut: garment detection, tracking, and tagging in fashion videos*

- Building an efficient end-to-end video pipeline that detects, tracks, and tags garments worn by protagonists, turning raw footage into structured catalog data.

**Student Researcher**, Computer Vision and Geometry Lab, ETH Zürich 02/2026 – Present

*Goal-driven 3D map generation* (Dr. Dániel Baráth, Prof. Marc Pollefeys)

- Trained a reinforcement-learning agent to dynamically allocate resolution across a 3D map based on the task at hand, keeping high detail in task-relevant regions while compressing the rest under a strict memory budget.
- Worked across the full pipeline, adapting and extending existing components for SLAM, efficient 3D map management, and 3D navigation, while developing the RL training pipeline.

**Student Researcher**, Learning & Adaptive Systems Group, ETH Zürich 02/2026 – Present

*Model-based reinforcement learning* (Dr. Bruce Lee, Thomas Bi, Prof. Andreas Krause)

- Conducted theoretical and applied research on model-based reinforcement learning: building on state-of-the-art world-model agents (Dreamer, TD-MPC), designed and evaluated novel exploration bonuses and alternative dynamics models.
- Contributed to *CyberRunner*, a learning-based robot that plays the physical labyrinth marble game at a superhuman level.

**Software Engineer**, ARIS, Zurich 10/2025 – 10/2026

- Developing the flight computer and communication stack (CAN bus, MAVLink) in Rust for the *Asteria* bi-liquid rocket competing at the European Rocketry Challenge 2026; own telemetry and command handling in a safety-critical real-time system.

**Undergraduate Researcher**, Politecnico di Milano, Milan 01/2025 – 03/2026

*Large deviation principles for Bayesian neural networks* (Prof. Federico Bassetti)

- Contributed to theoretical research on Bayesian neural networks, establishing new results on the probability of extreme events for a broad class of neural network models.
- Main contribution submitted to *SIAM Journal on Mathematics of Data Science* ([arXiv:2603.06023](https://arxiv.org/abs/2603.06023)).

## Skills

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|-----------|-------------------------------------------------------------|
| Languages | Python, C/C++, Rust, SQL, MATLAB                            |
| ML & Data | PyTorch, JAX, CUDA                                          |
| Tools     | Git, Docker, Linux, Slurm clusters, agentic AI tools, LaTeX |
| Spoken    | Italian (native), English (fluent), Spanish (elementary)    |