

Enea Monzio Compagnoni

PhD Student in Computer Science and Mathematics, Zurich, Switzerland

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I am a highly motivated PhD candidate specializing in Deep Learning and Stochastic Optimization, with a strong focus on **improving training pipelines**. During my **AI Research internship at Flexion Robotics**, I picked up an interest in deep reinforcement learning and achieved a **50% speed-up** in their fine-tuning pipeline for rough-terrain locomotion, while also enhancing the overall performance. My contributions were driven by novel architecture-search strategies and optimization objectives tailored specifically for RL applications. Additionally, I am developing a **planning agent** that leverages VLMs and VLAs to enable real-world robotic autonomy: Results are very promising!

I would be thrilled to join a research team to either:

1. Undertake a **20% internship** focused on RL training-pipeline refinement (starting September 2025);
2. Commit to a **100% internship** in RL training or planning-agent development (starting March 2026);
3. Transition into a **fulltime role** (starting October 2026).

If you are looking for a highly productive and motivated individual, consider me:

1. **I do not give up** when Math gets hard;
2. I see things **differently** than other people.

You do not want to miss out on my **unorthodox creativity**!

Skills

Programming Languages and Tools: **Python**, Sklearn, JAX, PyTorch, CUDA, Git, Hugging Face.

Deep Learning: Stochastic Optimization, VLMs and VLAs, Deep Reinforcement Learning.

Mathematics: Stochastic Calculus, Probability, Linear Algebra, Optimal Stochastic Control, Statistics.

Experience

Universität Basel

Oct 2022 – Present

PhD Student and Lecturer in Computer Science and Mathematics

- Conduct research on enhancing **differential privacy** for **LLMs** on GPT-2 architectures, contributing to secure and private AI advancements.
- Characterize the dynamics of optimization algorithms (SAM, AdamW, SignSGD, DCSGD) via **SDEs**.
- Mentor and teach students in **Deep Learning Foundations** and **Optimization** courses, enhancing their comprehension of advanced concepts.

Flexion Robotics AG

May 2025 – Aug 2025

Research Intern, AI Team

- Developed a **VLM/VLA-based** agentic framework for robots to perform complex tasks in simulation;
- Crafted a fine-grained prompt to bridge the sim2real gap: The robot does perform complex tasks in the real world thanks to our agent.
- Improved the training speed and performance of the pipeline for locomotion policies on humanoid robots: I leveraged insights derived from personal experience and guided by intuition of how optimizers behave on DRL applications.

Yahoo! Research

Jul 2023 – Sep 2023

Research Intern, Scalable Machine Learning Team

- Developed a **risk-aware model** for optimal control of **advertisement budgeting**, increasing spending control performance by **4%**, as validated through A/B testing.
- Applied **regression analysis** and **time-series analysis** to forecast ad spending and optimize budget allocations.
- Collaborated with cross-functional teams to integrate solutions into existing advertising platforms, enhancing system performance in a **fast-paced environment**.
- Utilized Python to analyze large datasets and implement machine learning models.

UBS AG

Jul 2019 – Sep 2022

AI Quantitative Analyst (Full-time Position)

- Designed a Lombard lending model for ultra-high-net-worth clients, enhancing decision-making processes through **predictive analytics**.
- Improved **liquidity forecasting** accuracy by **3%** for the Japanese market using regression analysis and time-series forecasting techniques.
- Enhanced anti-money laundering detection with **classification and clustering algorithms** (e.g., Adaboost, t-SNE), uncovering new fraud patterns and improving compliance.
- Conducted **experimental design** and statistical analysis to validate model performance, providing actionable insights to stakeholders.
- Collaborated with stakeholders in **complex financial environments** to implement AI solutions aligned with business goals.

Education

ETH Zurich

Sep 2018 – Apr 2022

Master in Quantitative Finance (GPA: 5.76/6, Summa Cum Laude)

University of Milan

Oct 2015 – May 2018

Master in Mathematics (Grade: 110/110, Summa Cum Laude)

University of Milan

Sep 2012 – Oct 2015

Bachelor in Mathematics (Grade: 110/110, Summa Cum Laude)

Languages

English, Italian

Interests

- Cooking
- Fitness and Gym
- Magic: The Gathering
- Warhammer 40000
- Strategy Board Games