

Luigi Pagani

Portfolio Mobile: +39 3404896210 Email: luigi2.pagani@mail.polimi.it GitHub: [Luigi Pagani](#) LinkedIn: [Luigi Pagani](#)

Summary

Machine Learning Engineer with expertise in High-Performance Computing (HPC) and deep learning frameworks. Experienced in building end-to-end ML pipelines and optimizing training and inference through distributed and multi-GPU systems. Skilled in Large Language Model (LLM) training, evaluation, RL environment development, deployment, and MLOps best practices.

Professional Experience

Machine Learning Engineer

Apr 2025 – Present

Nebul, Leiden, Netherlands

- Implemented LLM Ops and GitOps workflows with **Helm** templating for one-click deployments.
- Built one-click benchmarking and deployment of LLMs on a **100-GPU Kubernetes** cluster using **SGLang** and **vLLM**.

ML Research Engineer Intern

Oct 2024 – Mar 2025

Siemens Digital Industries Software, Leuven, Belgium

- Developed transformer-based neural networks for fast numerical PDE solvers on unstructured meshes and time-dependent simulations.
- Implemented **PyTorch DDP** (Distributed Data Parallel) for multi-GPU training.

Individual Contributor – [Project Numina](#)

Aug 2024 – Jan 2025

Remote

- Built an automated LLM evaluation pipeline for high-school math problems using the **OpenAI Batch API** for verification and **vLLM** for rollout generation.
- Designed a synthetic data generation system for math problem creation with open-source LLMs.
- Developed a bootstrapping pipeline to auto-formalize natural language into **Lean 4** statements, fine-tuning with **LLaMA-Factory**.

OSS Contributions

[Environments Hub](#)

Sep 2025 – Present

- Published three RL/eval environments on the [Prime Intellect Environments Hub](#):
 - SWE-Gym: packaged as a Hub environment with Dockerized runner.
 - Multi-SWE-Bench (OpenHands adapter): packaged as a Hub environment with Dockerized runner.
 - AidanBench: creativity and long-context benchmark.

Papers

Kimina-Prover Preview: Towards Large Formal Reasoning Models with Reinforcement Learning Apr 2025

Related to [Project Numina](#)

arXiv: [2504.11354](#)

Education

MSc in High-Performance Computing Engineering

Mar 2023 – Mar 2025

Politecnico di Milano, Italy

Grade: 110/110, *cum laude*

Recipient of merit-based scholarship for outstanding academic performance

BSc in Mathematical Engineering

Sep 2019 – Sep 2022

Politecnico di Milano, Italy

Final Grade: 103/110

Technical Skills

Programming: Python, Go

Infrastructure: Docker, Kubernetes, Helm, GitOps

ML Libraries: PyTorch, vLLM, SGLang, LiteLLM

Distributed: PyTorch DDP