Edoardo Pierluigi Leali

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Interested in: HPC ML Graph Deep Learning AI Acceleration

PROFILE

Enthusiastic MSc student in High-Performance Computing (EUMaster4HPC double degree) with a solid Computer Science foundation and hands-on experience in parallel programming and performance optimization. Also passionate about machine learning—especially deep learning and graph deep learning (GNNs/STGNNs)—and applying them to real datasets. Seeking an internship in Lugano where I can contribute to C/C++/Python codebases, accelerate workloads (OpenMP/MPI/CUDA), and build reliable, well-tested ML/HPC software.

EDUCATION

Politecnico di Milano & Università della Svizzera italiana (USI) — Milan, IT & Lugano, CH
MSc in High-Performance Computing (EUMaster4HPC Double Degree) — *2024 – 2026 (expected)*

- **Selected coursework**: Parallel Computing; Numerical Analysis for PDEs; Photonic Computing; High-Performance Data Analytics
- **Highlights**: Member of the pan-European EUMaster4HPC programme; mini-projects on MPI/OpenMP, GPU memory hierarchies, and performance modeling

Politecnico di Milano — Milan, IT
B.Sc. in Computer Science Engineering — *2019 – 2024*

SELECTED PROJECTS

Spatiotemporal GNNs for Wind Speed Forecasting (MeteoSwiss) — Course project
Graph Deep Learning — *2025*

- **Goal**: Explore STGNNs to improve numerical weather forecasts by predicting wind speed across Switzerland on MeteoSwiss data
- **Approach**: Station graph construction; temporal modeling (RNN/temporal convs) + message passing; MLflow logging; config-driven training
- **Tech**: Python, PyTorch, PyTorch Geometric, MLflow
- **Repo**: Fork with training scripts and configs: GraphDL-MeteoSwiss

AI Factory Benchmarking on MeluXina — Team Challenge (EUMaster4HPC)
HPC/AI Systems — *2025*

- **What**: Develop tools to deploy/benchmark AI services on the MeluXina supercomputer with SLURM orchestration
- **How**: Server/Client/Monitor modules; recipe-based launchers; Prometheus metrics export; JSON results
- **Tech**: Python, SLURM, Prometheus; packaging and CLI
- **Repo**: Team3_EUMASTER4HPC

ONN-Based Chromatic Dispersion Pre-Compensation (Simulation) — Course project
Photonic Computing — *2024*

- **What**: End-to-end MATLAB simulation exploring optical neural networks for chromatic-dispersion pre-compensation in fiber links
- **Tech**: MATLAB; custom training/visualization scripts
- **Repo**: ONN

Java Game — Bachelor project
Software Engineering — *2023*

- **What**: Designed and implemented a small 2D game in Java as a team; object-oriented architecture, unit tests, and CI basics
- **Tech**: Java, JUnit, Java-FX

Academic Activities

- **High Performance Computing for Specialised Applications Summer School** — Ankara, TR
  Participant — *Jul. 2025*

- **Passion-in-Action** — Politecnico di Milano
  Version Control with Git; High-performance Data & Graph Analytics — *2022*

- **EUMaster4HPC workshops** — online — Luxembourg, LU
  Mastering MATLAB: HPC Integration
  Scaling CUDA C++ to Multiple Nodes
  Intro to FPGA w/ Intel oneAPI (MeluXina) — *2024–2025*

Technical Skills

- **Languages**: C/C++, Python, Java, SQL, Bash

- **Parallel**: OpenMP, MPI, CUDA (course-level)

- **ML**: PyTorch, PyTorch Geometric (GNNs/STGNNs), numpy

- **Interests**: Performance engineering, data analytics, deep learning, time-series forecasting

Languages

- Italian (native) — English (C1) — German (A2)