

# Luigi Pagani

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## Education

- **MSc in High Performance Computing Engineering**

Politecnico di Milano, Italy

Mar 2023 - Present

GPA: 29/30

**Core Courses:** Numerical Methods for PDE, Numerical Linear Algebra, Deep Learning, Reduced Order Modeling, Numerical Analysis for Machine Learning, Advanced C++ Programming, Parallel Computing.

- **BSc in Mathematical Engineering**

Politecnico di Milano, Italy

Sept 2019 - Sept 2022

Final Grade: 103/110

## Work Experience

- **ML Research Engineer Intern**

Siemens Digital Industries Software

Oct 2024 - Present

**Core Tasks:** Developing transformer NNs for fast numerical parametric Partial Differential Equations solvers.

## Open Source Contributions

- **[Project Numina](#)**

Aug 2024 - Present

**Mission:** Fostering the development of artificial intelligence in the field of mathematics.

**Core Tasks:** Contributor in the synthetic data pipeline for LLMs.

## Projects

- **C++ & CUDA Parallel Implementations of Monte Carlo Methods for the 2-D Ising Model**

[GitHub Repository](#) — [Report](#)

- **Finite Elements for Neurodegenerative Diseases Modeling in C++**

[GitHub Repository](#) — [Report](#)

- **Time Series Forecasting with LSTMs, Seq2Seq and Transformers**

[GitHub Repository](#) — [Report](#)

- **CNN and Self-Supervised Learning for Plant Health Identification**

[GitHub Repository](#) — [Report](#)

- **Deep Learning-ROM for the Unsteady Navier-Stokes Equations**

[GitHub Repository](#) — [Report](#)

- **ROM with POD-Neural Network & POD-Galerkin for Parabolic Boundary Value Problems**

[GitHub Repository](#)

## Awards

- **Tuition Fee Waiver for High Merits**

Politecnico di Milano, Italy

Academic Year 2023-24

Awarded full tuition fee waiver for the academic year 2023-24 due to outstanding academic performance.

## Technical Skills

**Programming:** Python, C/C++, CUDA, OpenMP, MPI.

**Libraries:** PyTorch, TensorFlow, deal.II, FEniCS, Eigen, Trilinos.

**Tools:** Bash, Git, Jenkins, CMake.

**Operating Systems:** Unix, Linux, Windows.