Luigi Pagani

Email: luigi2.pagani@mail.polimi.it — GitHub: Luigi Pagani — LinkedIn: Luigi Pagani — Website

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
- **DL-ROM for the Unsteady Navier-Stokes Equations**
  GitHub Repository — Report
- **ROM with POD-Galerkin & POD-NN 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.