Edoardo Mangia

LinkedIn — GitHub

Education

Chalmers University of Technology — Gothenburg, Sweden *(Sept. 2024 - ...in progress)*
M.Sc. Engineering Mathematics (GPA 4.0/4.0)
High-Performance Computing (4.0/4.0) - Bayesian Machine Learning (4.0/4.0) - Compiler Construction (4.0/4.0)

University of Padua — Padua, Italy *(Sept. 2020 - Jan. 2024)*
B.Sc. Industrial Engineering (GPA 3.6/4.0)
Introductory Computer Science (4.0/4.0) - Operations Research (4.0/4.0) - Electrotechnics (4.0/4.0)

Experience

Jülich Research Centre — Jülich, Germany *(Feb. 2026 - May 2026)*
Research Intern (...incoming)
I'll be joining the IBG-1 team, contributing to their open-source `hopsy` and `PolyRound` frameworks. The idea is to develop high-performance implementations of polytope rounding algorithms and to improve the MCMC-based methods used for large-scale inference in systems biology.
More practically, I'll be working with C++ and Python for the GPU-accelerated computation and parallel benchmarking.

MAX IV Laboratory — Lund, Sweden *(Nov. 2025 - Jan. 2026)*
Research Intern
The project is conducted in collaboration between my university and the MAX IV Laboratory, a synchrotron light source facility. The focus is on building a simulation model to understand how X-rays interact with specific materials in different settings and ideally reduce sample damage in synchrotron experiments (XCT, SWAXS, XPS).
The model computes dosage prediction, radiolysis and thermal effects, using libraries from Geant4 and gVXR.

Chalmers University of Technology — Gothenburg, Sweden *(Jul. 2025 - ...in progress)*
Computing Lab Assistant
C3SE is my university main computing centre. I was there as a lab assistant, mainly dealing with:
- Assisting in the operation and maintenance of the "Vera" and "Alvis" HPC clusters for research computing.
- Supporting researchers with job-submission and system troubleshooting.
- Contributing to the user documentation and structure ideas for the next year exams.

ASML — Veldhoven, Netherlands *(Feb. 2025 - Jul. 2025)*
Machine Learning Intern
I was in the reticle-frontside R&D team, addressing nanoparticles contamination on EUV scanners reticles. More in detail, this involved:
- Numerically modeling the effects of the EUV-plasma, electrostatics around the reticle and chemical processes in the scanner.
- Building a pattern recognition model to identify clusters of particles on the reticle, considering their material composition, size and eventual bursts happening.

As for the tech-stack, I was using Python, Julia and C++ for machine learning, computational modeling and scientific computing tasks.

Skills

Programming Languages (Python, C, C++, Julia, Rust)
Parallel Computing (CUDA, OpenMP, OpenCL, MPI)
Machine Learning (TensorFlow, PyTorch, NumPy, scikit-learn)
Linux and Bash Scripting (vim, gdb, hyperfine)
Languages English (IELTS C1), French, Spanish, Russian (basic conversational level), willing to learn German.

Projects (GitHub)

Building a compiler in C++ for Javalette, a C-like language.
Developing a GPU-accelerated Poisson solver in CUDA C++.
Reimplemented research papers of personal interest and some other university coursework.
English (IELTS C1), French, Spanish, Russian (basic conversational level).