# QUENTIN BINSTOK

**Engineering Physics Student - Numerical Modeling & Scientific Computing**

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quentin-binstok | quentin-binstok



## EXPERIENCE

### Student Research Engineer

**Smart Grid - Montefiore Institute, ULiège**

July 2026 | Liège

- Formulated and implemented a Mixed-Integer Linear Program (MILP) in Python (Gurobi) to optimize the siting of Small Modular Reactors (SMRs) across the EU, maximizing installed capacity while meeting demand and satisfying constraints
- Processed EU-wide geospatial feasibility data (100m x 100m resolution) using rasterio to build candidate siting inputs for the optimization model
- Ran and scaled the optimization on the university HPC cluster to handle the large problem size
- Drafted the methodology section for a forthcoming research paper on SMR deployment feasibility in Europe

### Student Assistant

**CHU of Liège - Central Dispatching, Corelab**

Summers 2023, 2024, 2025 | Liège

- Transporting samples from patient collection points to different laboratories, and welcoming patients for blood tests
- Gained experience in operational logistics, patient interaction, and adherence to hospital procedures

## PROJECTS

### Particle-in-cell solver for inviscid fluids

**University of Liège**

January 2026 - June 2026

- Implementation of a fluid mechanics solver in C++ for internal and free-surface flows, including thermal effects
- Comparison of semi-Lagrangian, PIC, FLIP and APIC schemes, validated on Couette flow, von Kármán vortex streets, dam break and sloshing
- Team project with Git-based collaboration, CMake build system, JSON-driven configuration, and Python automation for test batches and post-processing

### $TiO_2$ nanosheets on Ag nanowires - Transparent Conductive Materials

**SPIN Lab, Physics Department, University of Liège**

Sept 2025 - June 2026

- Experimental study of optical and electrical properties of networks of silver nanowires coated in $TiO_2$
- Acquired skills in nanofabrication, photometric and resistivity measurements, data processing, and academic communication

## EDUCATION

### M.Eng. in Engineering Physics

**University of Liège**

Sept 2025 - Ongoing

- Coursework includes high performance computing, numerical methods, experimental physics, semiconductor devices, and plasticity theory
- Full-English curriculum

### B.Eng. in Engineering

**University of Liège**

Sept 2022 - June 2025

- Grade: Magna Cum Laude
- Focus on physics, scientific computing, applied mathematics and numerical methods
- Developed strong programming skills in C and Python, applied to modeling and simulation problems

## LANGUAGES

**French** ●●●●●

**English** ●●●●○

## TECHNICAL SKILLS

### Programming & Tools

C | C++ | Python | Bash | Git/GitHub | Linux | LaTeX

### Scientific Computing

Finite Element Method | High-Performance Computing (MPI/OpenMP) | Stability Analysis | Siemens NX