

Patryk Drozd

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EXPERIENCE

Software Engineer II

Sep 2025 — Present

Cadence

Cork, Ireland

- Developing and maintaining electrostatics simulation software within parasitic extraction.
- Parallelised numerical algorithms requiring optimisations for faster turn around time.
- Worked with customers and shipped requests spanning entire simulation flow.
- Created specialised debugging routine for at least 2x faster triaging of problematic code.
- Lead a hackathon team exploring and developing AI capabilities in automating routine debugging.

Teaching Assistant

Sep 2024 — May 2024

Trinity College Dublin

Dublin, Ireland

- Teaching assistant for a first year engineering mathematics module involving teaching and grading students assignments.

Research Intern

June 2024 — Sep 2024

Fraunhofer IWES

Oldenburg, Lower Saxony, Germany

- Developed benchmarking scripts for a particular site with data masts and wind turbines. This involved developing skills in data analysis through Pandas and computational fluid dynamics with OpenFOAM.

Undergraduate Researcher

June 2023 — Aug 2023

Maynooth University

Maynooth, Co. Kildare, Ireland

- I worked with a postdoctoral researcher to develop skills in machine learning with Python and Pytorch. I developed models to classify regions of space for whether they form features like black holes or stars, and to upscale coarse snapshots from cosmological simulations. A [link](#) the research poster.

EDUCATION

MSc, High Performance Computing

Sep 2024 — Sep 2025

Trinity College Dublin

Dublin, Ireland

- A mathematically inclined high performance computing course, with a focus on numerical algorithms and simulation.
- Student Representative for my year group.

Summer School - hpc4climate

28 July 2025 — 7 Aug 2025

ESiWACE & Warm World

Lauenburg, Germany

- Attended a summer school about learning about climate science and developing it within the context of heterogeneous computing and data science.

BSc, Theoretical Physics and Mathematics

Sep 2021 — Sep 2024

Maynooth University

Maynooth, Co. Kildare, Ireland

- A 3 year accelerated theoretical physics and pure mathematics course.
- Student representative for my year group in Physics department.

SKILLS

• Programming

- C++ — ISO, STL, Boost, multithreading with OpenMP, MPI, CUDA & in-house solutions.
- Linux — Experience with university and industry HPC systems.
- Shell — Generic scripting for routine automation, sh, bash, zsh.
- Python — Experience with libraries such as Numpy, Matplotlib, Pandas and Pytorch.
- AI — Frequent use including Claude Code and OpenCode for automation and debugging.

• Languages

- Fluent in English and Polish. Basic German skills.

AWARDS

- **Gold MUSE Award** *Maynooth University*

- An award recognising student contribution to non credit bearing activities.

PROJECTS

GPU Delaunay Triangulation

https://github.com/drozd324/GPU_Delaunay_Triangulation

- For my masters thesis I implemented a Delaunay triangulation meshing algorithm on the GPU with C++ and CUDA.

Finite Element PDE solvers

- As part of a significant undergrad project I worked on Finite Element solvers which numerically solved various linear PDEs using Python and Numpy.