Patryk Drozd

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Education

Summer School - hpc4climate 28 July 2025 — 7 Aug 2025
ESiWACE & Warm World *Lauenburg, Germany*
- A summer school involved with working on and learning about climate science within the context of heterogeneous computing and data science.

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.

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 departament.

Experience

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. poster

Skills

- **Programming**
  - Python — Proficient with libraries such as Numpy, Matplotlib, Pandas and Pytorch.
  - C/C++ — Proficient with ability to write parallel code with OMP, MPI, and CUDA.
  - Linux — Using linux machines including university HPC systems and WSL.
- **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
- For my masters thesis I'm implementing a Delaunay triangulation meshing algorithm with GPU acceleration 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. summary