

KACPER SZYMANSKI

Software Engineer / Computer Science Student

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EDUCATION

University of Edinburgh

Edinburgh, United Kingdom

Bachelor of Engineering in Software Engineering

Sep 2024 – Present

- **Courses:** Linear Algebra, Calculus, Functional Programming, OO Programming, Computer Systems, Data Science, Algorithms & Data Structures, Discrete Maths, Probability, Software Engineering
- **Activities:** CompSoc Technology Society (President), HYPED Hyperloop Society (Sensors Programmer), HackTheBurgh (Organiser for 2 years)

SKILLS, PROGRAMMING LANGUAGES, TOOLS

- **Languages:** English (Native speaker), Polish (Native speaker), Japanese (Basic proficiency)
- **Soft Skills:** Public Speaking, Planning and Organisation, Communication, Critical Thinking, Leadership
- **Programming:** Python, SQL, MATLAB, Haskell, Java, Javascript (React, Vue, Express), Rust, LaTeX, R, C, Claude Code for boilerplate code and verification
- **Tools:** Git, Linux, VSCode, IntelliJ IDEA, GitHub CI / CD, JUnit Testing
- **Interests:** Cybersecurity, Linguistics, Embedded programming, Rust, Scientific Computing, Data Visualisation

PROJECTS

Cache Simulator

University Project - C, Memory Management, Low-Level Programming

Nov 2025 – Nov 2025

- Developed a cache simulator in C to specification, capable of taking in a series of access instructions and tracing how these accesses would take place in a system with a two-level cache hierarchy.
- Implemented write back and write allocate policies as well as cache configuration options to specify block size, total cache size, associativity and number of levels (maximum 2). The caches used the Least Recently Used eviction policy.
- Improved my direct experience with memory allocation and types in C, as dynamic memory allocation (and subsequent freeing) was a substantive part of this project.

Science Simulations - Radionucleides, Solar System, Cellular Automata

University Project - Python, OOP, Testing, matplotlib

Jan 2026 – May 2026

- Developed object-oriented Python code to simulate and visualise a variety of different mathematical and scientific processes (e.g. radioactive decay, the mandelbrot set and traffic modelled by a cellular automaton)
- Implemented OOP best practices (loose coupling, test-driven development, inheritance) for the final project which simulated orbits of the solar system with matplotlib through various integration methods (Beeman, Euler-Cromer, Direct Euler)
- Tested code extensively to ensure correctness and robustness to invalid inputs, runtime errors and potential timeouts

Data Science Report on the Pandemic's effects on Energy Demand Peaks

University Project - Jupyter Notebook, Pandas, matplotlib, seaborn

Feb 2026 – Apr 2026

- Investigated the effects of the COVID-19 Pandemic on the daily energy demand curve in the United Kingdom's national grid, finding that morning and afternoon peaks shifted in time due to the pandemic's disruption to daily life
- Performed every step of the data science pipeline, from data cleaning to visualisations through the use of python libraries such as matplotlib, pandas and seaborn to identify trends and relationships in the data
- Verified statistical significance of results through tests and methods such as hypothesis testing, bootstrapping and reading p-values at a 5% significance level.

LEADERSHIP AND ACTIVITIES

HYPED - Hyperloop Edinburgh

Edinburgh, United Kingdom

Software Engineer (Sensors)

Sep 2024 – Jun 2025

- Responsible for reworking a legacy C codebase and rewriting it into Rust, specifically sensor code implementation.
- Improved my understanding of hardware programming and test-driven development through data sheets and consistent pipeline tests via GitHub CI / CD.
- Collaborated with other software teams to integrate sensor code into the wider software pipeline, ensuring sufficient error handling and formatting was provided to prevent critical errors.

- Managed a team of 15+ committee members to run the biggest student tech society in Scotland, delivering events for the student body and industry partners with large turnouts (100+).
- Demonstrated leadership and planning skills by organising large events like HackTheBurgh XII, the openEuler hackathon and panel talks by society sponsors.
- Acquired sponsorships for the society worth over £40k altogether through meetings and pitches to industry partners.

WORK EXPERIENCE

George Watson's College IT Team**On-Site, Edinburgh***IT Intern*

Jun 2023 – Aug 2023

- Worked closely with different sections of the IT team in upgrading IT infrastructure during the summer period.
- Upgraded 300+ machines' operating systems and software to stable and recent builds, ensuring system security. Automated steps of the machine setup process using scripts to get this process done much faster.
- Built up hands-on experience with mass device management (MDM), learnt good IT security practices and was able to gain insights into how large-scale infrastructure upgrades are carried out efficiently.

JPMorgan (Work Experience Week)**On-Site, Glasgow***Work Experience Programme Participant*

Jul 2022 – Jul 2022

- Collaborated with a team of 5 others over the week to build and present an internal eco-friendly initiative with software.
- Shadowed a variety of employees and attended interesting talks on web development, bluetooth systems and explored how software development occurs at a large company.
- Boosted my teamworking skills and gained hands-on experience with working on a fullstack project using React and Express for front-end and back-end logic respectively for the eco-friendly initiative project.