Bart Weil

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Education

Imperial College London June 2025
Bachelor of Engineering in Mathematics and Computer Science *First class honours - Averaging 83% in final year*

St. Paul's School London June 2022
A^* in Maths, Further Maths, Physics, Chemistry

Relevant Coursework

Relevant Completed Modules: Statistical Modelling, Computer Vision, Robotics

Skills

Languages: C, C++, Python, SQL, Typescript, HTML/CSS, LaTeX, Bash, Julia

Frameworks/Libraries: React, PyTorch, NumPy, Pandas, Polars, SciPy, Matplotlib, Flask

Projects

Durhack X — QRT Data Engineering Hackathon Winner | *Python, Polars, Flask, React* Nov 2025
- Won first prize in QRT's "Meet in the Middle" Challenge at Durham university by designing a custom pathfinding algorithm and web app to minimise travel carbon emissions and provide agentic booking assistance.
- Searched and processed 100+ GB of flight data in under 3 seconds using a Polars-based variant of the ALT (A*, Landmarks, Triangle Inequality) algorithm with parallelised execution and caching

2D-to-3D Pose Lifting under Camera Motion | *Python, NumPy, pytorch, git* November 2024 – June 2025
- Introduced a novel procedural generation technique to synthesise robust distributions of camera motions for the CMU Motion Capture dataseat. Implementation was made publicly available on GitHub in the CMU Procedural Trajectories repository
- Achieved near state of the art accuracy and speed on model benchmarks applying my novel pre-training approach on existing models

Imperial Module Review Page | *Flask, Python, JS, SQLAlchemy, HTML, CSS, Heroku, Git* May 2024 – June 2024
- Collaborated in a team of 4 to build a website helping Imperial students make informed module choices, approved for pilot use by the Department of Computing after user research through surveys and interviews
- Implemented an NLP-enabled search interface for keyword and sentiment extraction to filter reviews, and LLM-powered course recommendations to balance student workloads

WACC - A toy language compiler | *Scala, Parsely, git* January 2024 – March 2024
- Designed and built a compiler for the WACC programming language as part of a group of 4
- Used existing parser combinator libraries to perform syntax checking and provide error messages, as well as semantic checking on the parsed AST
- Compiled into multiple intermediate representations, and supported multiple forms of optimisation

Experience

Seal (YC S20) | *Winter Intern* December 2025 – Jan 2026

- Extended LangChain-based retrieval and tool-calling pipelines to enable Seal's AI assistant to generate excel-style formulae
- Rapidly iterated on client and sales team feedback to implement custom workflows and dashboards for IMU Biosciences' electronic lab notebook, extending the Seal NodeJS SDK and designing custom react interfaces

SmartTech Cybersecurity Ireland | *Junior Developer Intern* August 2024 – September 2024

- Delivered numerous fixes and optimizations to MDR dashboard. Improved the responsiveness and reliability of back-office tooling, and curbing deployment time by 10%