

Education

University of Bristol	2025-2028 (Expected)
Studying BSc (Hons) Physics with a focus on scientific computing	
SGS Berkeley Green UTC	2022-2024
Studied A Level Physics (A*), Maths (A*), and Computer Science (A) despite post-concussion syndrome.	
SGS Berkeley Green UTC	2020-2022
- Studied GCSE Computer Science, Maths, Further Maths, Physics, Biology, Chemistry, History, and English. - Achieved three Grade 9s (A*), two Grade 8s (A*), two Grade 7s (A), and two Level 2 Distinctions (A*)	

Experience

Metaculus Bot Competition	2025-2026
- Created an AI research and prediction engine that participated in the Metaculus FutureEval competition, coming second place (participation-adjusted) in the first tournament I competed in, followed by third, sixth, and fifth place in subsequent tournaments. - Focus on high quality deep research via agentic swarms and agent-driven website data extraction - Participated in a Penn University study on forecasting progress (not yet published) - Wrote about the direction of forecasting research and prediction	

Nuenki Platform	2025-2026
Nuenki spinoff that used a novel Deep Translation algorithm to produce the world's best machine translation	

Nuenki	2024-2026
- Started a small business developing and selling an educational SaaS tool in my gap year - Involved high-performance Rust, Javascript, Typescript, Node.js, React, Next.js, Python, scikit-learn, database (PostgreSQL) performance optimisation, WebAssembly, AI via Large Language Models, and natural language processing. I used probabilistic datastructures to estimate sentence difficulty in microseconds. - Conducted research into LLM translation performance, identified multiple novel optimisation opportunities, and developed a hybrid translation methodology that outperforms all other machine translation systems. - Presented research findings on LLM translation performance to JustAnswer in a paid technical presentation. - Learnt a broad range of additional skills, including marketing, advertising, accounting, operations, and SEO.	

Inspire to Aspire	2022-2023
- Independently developed, deployed, and maintained a web-based internal tracking tool for a local small business. - Written in Javascript and Python.	

Selected Programs

BlueDot Context Week	September 2026 · Berkeley, CA
Selected for a 24-person residential program examining AI capabilities, risks, and empirical research through discussions, seminars, and debates.	
Invisible College (Works in Progress)	August 2026 · Cambridge, UK
Selected for a residential seminar on scientific, economic, and institutional progress, covering topics including spatial economics, the Industrial Revolution, and scientific fraud.	

Work Experience

University of Bristol	2025
Assisted a research team by developing a networked Arduino-based pressure control system as a prerequisite for an experiment into human-computer interaction. The control system was written in Rust, and communicated over a custom serial protocol with a Rust-based control system, which exposed an Axum-web API for a Next.js frontend.	
Microsoft Research Cambridge	2023
Worked on an early prototype of the Muse generative AI model, experimenting with its preliminary UX in Unity.	
University of Bristol	2023
Developed and iterated upon Python code for the Diverse-ability Interaction Lab on the "Social play technologies for autistic and non-autistic children" research project, collaborating with a PhD student to improve code quality and maintainability.	

- CGI UK

2023

- Worked with Raspberry Pis and quadcopters for a fictional search-and-rescue project.
- Microsoft Research Cambridge

2022

- Collaborated on a real project that used machine learning to help blind people find objects.
 - Developed a Python CLI for comparing custom and off-the-shelf Azure ML Platform models.

Projects

- Hypertunnel

2023-2024

- Novel research project for deep-packet-inspection firewall evasion that can tolerate extremely restrictive networks, operating at high performance through TLS-decrypting firewalls without access to request streaming, websockets, or server sent events.

- Arbor-Plus

2023-2024

- Independently developed and maintained a reverse-engineered frontend for the Arbor school management system to improve student UX. It had 25 active users before I left school.

- Deuterium

2022

- NASA Space Apps Challenge group project that contextualised Solar Dynamics Observatory data by mapping solar coordinates to Earth coordinates and won regionally.

- ORBIT-CC-comparison

2022

- Developed a tool to evaluate the ORBIT dataset on the Azure Custom Vision API during my 2022 Microsoft Research work experience.

- OpenXGAuthenticator

2020-2024

- Independently developed and maintained an open-source reverse-engineered authentication system for Sophos XG firewalls. First written in Python then rewritten in Rust.

- Integrated System for Autonomous Navigation (ISAN)

2020-2022

- Multilateration-based location calculation code for a videogame in a Lua-like language. I built tooling that compared the performance and accuracy of different iterations, and integrated it with Starbeam.

- Starmap + Starbeam

2020-2022

- Worked with an international team to develop a web-based real-time 3D map for the aforementioned videogame using Three.js, named Starmap. I primarily worked on the Three.js frontend, improving performance, graphical fidelity, and the UX.
 - Also led a small team to use computer vision to access ingame ISAN coordinates, transmit them to the Starmap server, and show an Electron-based overlay of nearby craft. It was named "Starbeam".

- Project Wildfire

2019

- Collaborated on a regionally-winning hackathon project that merged satellite data to show information about nearby wildfires in a group project for the NASA Space Apps Challenge.

Selected Technical Achievements

- **Lockheed Martin Code Quest:** Won nationally in 2020
- **Open Source:** Contributed a security fix to GCHQ's CyberChef; built multiple reverse-engineered authentication tools.

Skills, Technologies, and Experience

Languages	Technologies	Skills
• Python (8 years) • JavaScript/TypeScript (6 years) • Rust (5 years)	• Large Language Models • AWS Bedrock • PostgreSQL • Docker • Linux • Git • Node/React/Next.js • Flask • Axum Web + Actix Web • WebAssembly	• AI Forecasting Research • AI Translation Research • Machine translation and natural language processing • Agentic research systems and web data extraction • Performance optimisation • Reverse engineering • AI-assisted software development