

Education

Imperial College London [↗](#)

Sep 2019 – Jul 2023

MEng Electrical and Information Engineering: **(1st) 75.29%**

- **Notable Modules** - Data Structures and Algorithms / Instruction Architectures & Compilers / Optimisation Algorithms

Professional Experience

Graduate Software Engineer

Sep 2023 – Present

The Hut Group (THG), Full Stack Software Engineer

Overview: Collaborated with the E-Commerce to streamline the creation and deployment of **globally recognized sites** like **lookfantastic.com, myprotein.com, mp.com, allsole.com and coggles.com**.

- Analysed and optimised site metrics like total blocking time, TTFB, CLS, LCP, FCP using tools such as Chrome profiling and Calibre. This contributed to achieving a PageSpeed Insights core web vital score of **98%** on Mobile and **100%** on Desktop and lowered the total memory utilised by product list, home and product display pages by **62%, 68%** and **8%** respectively.
- Implemented a data-link bridge microservice for site internationalization (i18n) providing site wide and site specific translations for different locales and currencies. Utilized **Helm, Kubernetes, Docker**, and **GitHub Actions**, incorporating automated deployment, testing, version and access control. **Enabled i18n across multiple sites** and is currently in use.
- Developed on storefront and account sections utilizing the Astro Web framework, and Vue3. This includes creating responsive, reusable UI components, implementing the front-end on PDP, PLP, Account, and Home pages, calling the appropriate **GraphQL** endpoints to fetch page data, testing and implementing the necessary site features.
- Integrated Cypress for regression and end-to-end testing into the CI/CD pipeline for the account section the sites.
- Provided firefighting support to resolve site-wide issues resulting in **higher customer retention** and **improved site reliability**. This includes, responding to Dynatrace and Pingdom callouts, analysing BigQuery logs and Grafana dashboards to distinguish between malicious attacks and broken releases, rolling-back deployments and writing post incident reviews.

Software Engineering Intern

Apr 2022 – Sep 2022

The Hut Group (THG), Research and Development

- Implemented an architectural solution which improved site speeds for **coggles.com** by over **600%**. Impressed the **CTO of THG** and got nominated for **Intern Of The Quarter**. Utilised Web Watchers, CDNs and serverless compute service (AWS Lambda).
- Liased the R&D team to design and implement a scalable, high-performance architecture for deploying e-commerce sites.
- Full-Stack Development. Used Nuxt.js, Vue, Vanilla JavaScript, HTML and Tailwind CSS, for the front end, and AWS S3, CloudFront, and CloudFormation for the back end. Also investigated using Chrome profiling to improve on website performance using metrics like Cumulative Layout Shift and Largest Contentful Paint and First Input Delay and Time To First Byte.

Projects

C-to-MIPS Compiler [↗](#)

Apr 2021 – May 2021

- Developed a C to MIPS compiler, incorporating a lexer, parser, and code generation for its pipeline stages.
- Utilized Flex for tokenization, Bison for parsing, C++ for code generation, and Make for build automation.

Pilot Scheduling REST API Solo Project [↗](#)

Feb 2021 – Mar 2021

- Designed a backend service with a RESTful API that can provide on-demand Pilot scheduling.
- Passion project to deepen my understanding of RESTful APIs. Built using the .NET 5 SDK framework and coded in C#.

MIPS CPU [↗](#)

Oct 2021 – Nov 2021

- Engineered a MIPS-compatible CPU in Verilog, targeting the 32-bit little-endian MIPS1 instruction set.
- Developed an Avalon memory-mapped interface and used Python for testing with automated shell scripts for validation.

Awards

Regional Champion 2023 [↗](#)

Sep 2022 – May 2023

The 2023 IEEE International Symposium on Circuits and Systems

- Attained the IEEE Student Design Competition **Regional Champion** which consists of **Europe, Middle East and Africa**.
- Collaborated with another student to implement a medical wearable for monitoring patients with dengue fever.
- Implemented the low-level communication protocol between a Microcontroller and 2 Analogue Front Ends using C in the Espressif-IDF Framework. Code optimised for very high performance and throughput.

Intern Of The Quarter [↗](#)

Feb 2022 – Jul 2022

The Hut Group (THG)

- Designed and implemented an architectural improvement that increased site speed by **6 times**.
- Performed a demo on the implementation to the **CTO of THG** as an Intern.

Real Impact Hack - Runner Up Award [↗](#)

Feb 2022 – Feb 2022

ICHack 2022 - Largest Student Run Hackathon in the UK

- Collaborated with a team of five to develop a mobile application enabling users to discreetly report public incidents.
- Detectronv2 library trained on a dataset in Python used for weapon detection. Integrated with a React Expo mobile web app.

Skills

Languages and Technologies - Python / C# / Javascript / C++ / C / Bash / SQL / HTML / CSS / Tailwind CSS / Kubectl / Verilog / Java / Typescript / Data Structures and Algorithms / GraphQL / Computer Vision / Git / Helm / Kubernetes / Docker / Kibana / AWS / Astro / VueJS / Calibre / Chrome Profiling / Cypress / Grafana / ASP.NET Core / NuxtJS