Alex Chitham

Computer Science Student / Software Engineer

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PERSONAL PROFILE

I am a motivated, conscientious, and focused undergraduate looking to challenge myself and develop my IT and working skills in a software engineering position. With a solid academic record and a year-long software engineering internship, I've developed a strong IT skill set with a passion for technology. I have an excellent track record of successful teamwork and the ability to learn quickly, and I am therefore confident that I can make an excellent contribution to any team or project.

EDUCATION

2021 – 2025

Computer Science BSc with Placement
University of Bath
- **First Year:** 83.0% Average, First Class
- **Second Year:** 75.5% Average, First Class

2014 – 2021

A-Levels and GCSEs
Norton Knatchbull Grammar School
- **A-Level:** Computer Science (A*), Maths (A*), Further Maths (A*), Physics (A*)
- **GCSE:** Five 9s, three 8s, two 7s, including Maths (9) and English (7)

EXPERIENCE AND SKILLS

2023 – 2024

Software Engineering Intern (Year-long Placement)
PQShield (Post Quantum Cryptography Specialists)
- Researched Software Bill of Materials (SBOM) to recommend how best PQShield could make them. Learnt about the importance of SBOMs for software security.
- Using C and C#, wrote two APIs to wrap around PQShield's cryptographic software library, to aid with its portability. One was delivered to a client.
- Produced a compatibility demo in C showing two of their products working together. I modified their software development kit for crypto and secure communication, to offload its cryptographic operations onto their specialised hardware that performs accelerated cryptography. I loaded the hardware onto a KV260 FPGA board and the used its API to add it as a new backend compilation option to the software development kit, removing the reliance on the software crypto library. Using docker containers and the Make build system, I added this modified SDK to their existing post-quantum web browsing demo. This demo is now being turned into a full product for a key client.
- Implemented a post quantum secure communication protocol, PQNoise, in C, and used a static analyser to comply with CERT-C. Created known answer tests and used the Unity testing framework to thoroughly verify the implementation.
- Gained interview skills by participating in the hiring of new interns. I provided insight from my student experience, CV sifted, questioned candidates during interviews and was involved in the final decision making.

Summer 2022	The White Lion Pub/Hotel
	Serving and waiting on customers helped develop my communication and customer service skills. Busy shifts at weekends taught me how to multi-task under pressure, prioritise and improved my ability to make quick decisions.
Summer 2021	Work Experience - Secretariat (Forensic Accounting & Investigating Company)
	I prepared spreadsheets to model cash flows for potential new projects by examining relevant data. This improved my analytical skills and taught me how to operate within a team in the workplace. I improved Excel record sheets using Microsoft Power Query, gaining an insight into their business systems and processes.
2021 – Present	Tutoring
	I worked for both a local tutoring company for 11+ students, and privately through the Tutor Hunt website teaching A-level Maths and GCSE sciences. I learnt to communicate effectively in both a group setting and 1-to-1, adapting my methods to suit a pupil's ability and understanding.

TECHNICAL SKILLS

- Professional experience using:
  - **C** and the **CMake** build system, used extensively throughout my placement.
  - **Git**, including advanced commands like interactive rebases.
  - **Jira** for task management of large projects.
  - **Linux** for software development.
  - **Agile** / **Scrum** and **Kanban** methodologies, using weekly stand-up meetings and a Jira board to monitor progress and keep on track with large projects.
- Competent using:
  - Other procedural and OO languages including **Python**, **C#**, **Java**.
  - Windows, Mac, and Linux (Ubuntu distro) operating systems.
  - Microsoft Office and Google Workspace applications.
- Experience using:
  - **CI / CD** pipelines in GitLab throughout my placement.
  - **Docker** to build and run large commercial products with multiple docker files.
  - **Haskell** for functional programming at university.
  - **Unity** and OOP in C# to make an animated stealth game with ¾ view.
  - Android Studio, VS Code, Eclipse, Firebase for programming projects.
- In the process of building my own portfolio website from scratch using **HTML** and **CSS**.
- Currently completing a course on **Flutter** and **Dart** on Udemy for app development.

OTHER INTERESTS

- I read the TLDR newsletter, a daily email about the biggest tech stories that day.
- A keen tennis player: represented school and Club teams in regional competitions and coached junior players alongside Head Coach.
- I keep physically active: attend the gym, play tennis, badminton, and table tennis.
- A team player: enjoyed Duke of Edinburgh (achieved Bronze and Silver) and National Citizen Service.
- I enjoy meeting new people and socialising in my free time.
- Full clean driving licence.

REFERENCES

Simon Maytum
Secondary School Maths Teacher
Norton Knatchbull School
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Luke Mather
Mentor during Placement
PQShield
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