Sam Popham

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With a strong foundation in Python, I am passionate about problem-solving and building interactive, user-centric applications. My experience encompasses collaborative project work, effective communication, and rapid learning, complemented by robust customer-facing skills honed in dynamic retail environments. I am particularly driven by interactive technologies, computer graphics and visual computing, and the evolving field of Artificial Intelligence, consistently applying theoretical knowledge to practical, impactful projects.

Education

University of Bath - *BSc (Hons) Computer Science with professional placement (2024 - 2028)*

First Year Average: *69.3%* | **Predicted grade:** *First Class*

- **Programming 1 & 2 (75%, 71%):** Mastered functional, imperative, and object-oriented programming; developed data structures and algorithms. Applied Agile methodology in successful group projects to implement robust software solutions.
- **Artificial Intelligence 1 (70%):** Explored core AI principles and problem-solving algorithms; gained practical experience in designing intelligent systems.
- **Computer Systems Architectures (56%):** Understood computer hardware/software interaction, operating systems, and network fundamentals for performance optimization.
- **Discrete Mathematics and Databases (65%):** Applied mathematical reasoning to computational problems; gained practical skills in relational database design (SQL) and data management.
- **Mathematics for Computation (79%):** Significantly strengthened analytical and problem-solving abilities through advanced mathematical concepts.

Modules for Year 2 include further advanced topics in: software engineering, algorithms, machine learning, visual computing, human-computer interaction, advanced programming, and cybersecurity.

Churston Ferrers Grammar School *(2017 - 2024)*

- **A-Levels:** Mathematics (A*), Further Maths (A*), Computer Science (A)
- **AS-Level:** Chemistry (B)
- **GCSEs:** Achieved grades 8/9 in 11 subjects, including Mathematics and English.

Work Experience

Trading Assistant - *Sainsbury's, Paignton & Bath (March 2023 - Present)*

- Developed strong communication and customer service skills by effectively interacting with diverse customers.
- Managed stock replenishment and aisle organisation, ensuring efficient store presentation.
- Demonstrated excellent time management and adaptability by balancing responsibilities across two locations while studying.

IT Placement Intern - *Council IT Department (July 2023)*

- Gained first-hand experience in a professional software development environment, observing backend processes, content management systems, and web security.
- Shadowed various technical roles, gaining insight into collaborative workflows, team dynamics, and project lifecycle management.

Volunteering Experience

Maths Mentor - *Churston Ferrers Grammar School (Oct 2022 - Jul 2023):*

- Tutored Year 10 students on GCSE mathematics, demonstrating effective communication of complex concepts, strong problem-solving, and emotional intelligence.

Thompson House Representative - *Churston Ferrers Grammar School (2020 - 2021):*

- Effectively represented peer views and collaborated with teachers to improve the school experience, improving confidence, negotiation, and organisation skills while actively contributing to the school community.

Tech Stack

Languages used: Python, Java, JavaScript, Dart, C++, HTML, CSS, Haskell
Tools & Platforms: Git, VSCode, Blender, Unity, Familiar with GenAI

Projects

Chess Engine with AI Search - *Python (2024-2025)*

- Developed a chess engine using alpha-beta pruning, quiescence search, MVV-LVA move ordering, and transposition tables
- Focussed on optimising search depth and evaluation speed under computational constraints

Mobile Physical Shutoff Alarm app (group project) - *Flutter/Dart (2025-2026)*

- Contributing to an Android application featuring alarms, notifications, local persistence, and machine learning integration.
- Developing a real-time data pipeline to process camera input into human pose data for activity verification.
- Collaborating within a modular, clean architecture (data / logic / presentation layers) using Git for version control and Agile methodologies.

Machine Learning and AI Coursework Projects - *Python (2025-2026)*

- Implemented classifiers including Naive Bayes, k-NN, decision trees, and k-means clustering from scratch to master underlying algorithmic principles.
- Applied supervised and unsupervised learning techniques to real-world datasets, such as spam classification.

WebGL Bézier Curve Visualiser - *JavaScript, WebGL (2025)*

- Implemented interactive Bézier curve rendering, applying vector mathematics and parametric curve equations to generate smooth, real-time visual output

Activities & Interests

Technology: I enjoy experimenting with computer graphics, researching emerging tools, AI behaviours, and gameplay mechanics, often building small projects in Python and Blender.

Passion: I'm particularly drawn to interactive systems and visual computing, combining creativity with technical problem-solving.

Research: I actively explore emerging technologies in AI and graphics, following research channels and applying new ideas in personal projects.

References

Available on request