

# Bailie-Peirce Byrne

📞 07305135149 ✉️ byrnebailie@gmail.com 💬 linkedin.com/in/bailie-byrne 🐦 github.com/bailiebyrne

Second-year Computer Science student passionate about algorithmic problem-solving, high-performance systems ,and applied mathematics, currently researching FPGA technology as a hobby.

## Education

### University:

BSc (Hons) Computer Science with Software Development (with Industry Placement Year)

Sep 2024 - Jun 2028

(University Of Liverpool)

- Achieved 1<sup>st</sup> Class First Year (Avg: 80%)

- Relevant Modules: **Data Structures & Algorithms | Software Engineering | Database Development | Computer Networks | Theory of Computation |**

### College (A Level):

Computer Science, Mathematics, Physics

(King Edward VI Stourbridge)

- Received Collis Prize for Computer Science

## Work Experience

### MiDAS (Mission Director and Autonomy Systems) Software Engineer

(BAE SYSTEMS)

Software Engineer Intern at BAE SYSTEMS

Jun 2025 – Sep 2025

- Engineered AI computer vision solutions in C++, creating a custom neural network with backpropagation (without external libraries), improving object detection accuracy to **99.98% across 10,000+ test images**.
- Implemented OTSU thresholding methods to enable object detection without prior model training with a **95% success rate**, ensuring **backwards compatibility** with the neural network.
- Created an internal universal debugger using **binary and function instrumentation**, used to speed up fault analysis.
- Applied SYS-ML modelling in line with the UK MoD Pyramid Reference Architecture and contributed in Agile sprints using **Jira** (planning, stand-ups, retrospectives).
- Presented technical deliverables to senior leadership, including the **CTIO** and liaised with the **CFO**, gaining exposure to **C-level decision-making and strategic project discussions**.

### Retail/Hospitality

Games Host At West Midlands Safari Park

(HB Leisure Ltd)

Oct 2022 – Sep 2024

- Thrived in a **Fast-Paced Environment** while maintaining a **professional** but **approachable** demeanour to ensure guest retention.
- **Liaison** with **2000+** customers.
- Adapted rapidly in a **high-throughput environment** maintaining professional communications, receiving **0** complaints.

## Qualifications/Licenses

### Goldman-Sachs & Wells Fargo - Software Engineering Virtual Work Experience(s)

Oct 2024

- Use of cryptographic software to crack a database leak with a 14M+ wordlist providing feedback in securing future systems.
- Use of **Python** and **Hashcat** within a **Linux** environment to suit 3 dependent application requirements.
- Use of the **Java** language to construct 5 classes in relation to **refactoring** a banking codebase.
- Required strong syntax with **0%** tolerance for error as this job was to **mimic production level software**.

## Projects

### Python-MMORPG | Multiplayer | AI | Source Code |

Python | SQL | TypeScript

- Developed a fully functioning online MMORPG using the Python language, incorporated was AI pathfinding algorithms and complex mathematical angular formulas. Data manipulation and representation of 10+ file types and varied sizes.
- Use of generative algorithms to populate in game containers, which can be accessed concurrently by 4,096 players.

### Java-Web-Banking-App | Website | Enterprise Grade | Source Code |

Java | ReactJS | SQL | HTML/CSS | JavaScript

- Created both a fully functioning Front and Back-end **Spring Boot** web application to host a banking software with modern security features like **JWT, CORS** filters and use of self-signed **SSL certificates** to provide **HTTPS security**.
- Developed the front-end delivered by ReactJS to leverage functionality while maintaining a **sub 20ms** response time.
- 20+ **REST API** endpoints some secured behind authorities', others publicly accessible. Tested with **JUnit** tests as well as development tools like **Postman**.

## Technical Skills

(Ordered By Proficiency)

**Languages:** | Python | C++ | Java | SQL | HTML5 & CSS | Haskell | ADA | TypeScript | JavaScript |

**Developer Tools:** | Jira | Git & GitHub | JUnit | Lombok | MKcert | Postman |

**Libraries/Frameworks:** | Spring Boot | ReactJS | Maven | NodeJS | Docker | DDS (RTPS) |

**Methodologies & Environments:** | Agile (Scrum) | CI/CD Exposure| Linux Environment | Test Driven Development |

**Other:** | Standard DBS | Enhanced DBS | Security Clearance (SC) |