Bailie-Peirce Byrne

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Education

University:	**Sep 2024 - Jun 2028**
BSc (Hons) Computer Science with Software Development (with Industry Placement Year)	*(University Of Liverpool)*
College (A Level):	**Sep 2022 - Jun 2024**
Computer Science, Mathematics, Physics	*(King Edward VI Stourbridge)*

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   ***(HB Leisure Ltd)***
Games Host At West Midlands Safari Park   **Oct 2022 – Sep 2024**

- Thrived in a **Fast-Paced Environment** while maintaining a **professional** but **approachable** demeanour to ensure guest retention. **Liaison** with **2000+** guests to compromise and assist with their requests and concerns, while reporting up my established chain of command, receiving **0** complaints.

Qualifications/Licenses

Goldman-Sachs - *Software Engineering Virtual Work Experience*   **Oct 2024**

- Use of cryptographic software to crack a database leak and provide relevant feedback in securing their systems.
- Use of **Python** and **Hashcat** alongside other industry tools.

Wells Fargo - *Software Engineering Virtual Work Experience*   **Oct 2024**

- Use of the **Java** language to construct multiple classes and instances in relation to **refactoring** a banking codebase
- Required strong syntax with no room for error as this job was to **mimic production level software**.

Projects

Python-MMORPG *| Multiplayer | AI | Source Code*   ***Python | SQL | TypeScript***

- Engineered a fully functioning online MMORPG using the **Python** language, incorporated was **AI** pathfinding algorithms and complex mathematical angular formulas. Data manipulation and representation of many file types and sizes.
- Use of generative algorithms to populate in game containers, which can be accessed concurrently by multiple 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.**
- Formatted the UI and UX to work on any device and browser ensuring compatibility, **CLI** runtime commands exist to manage users and perform actions without hindering system uptime. Built around a **highly scalable** architecture.
- Front end delivered via **ReactJS** to leverage built in functionality while maintaining a responsive and easy to use system.
- Multiple **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 | Java | SQL | C++ | 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) |
Other: | Standard DBS | Enhanced DBS | Security Clearance (SC) |