Mackenzie Blackaby

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PROFILE

First-class Computer Science graduate from Lancaster University with strong expertise in low-level and front-end development. Skilled in creating C/C++ SDKs for microcontrollers and peripherals and experienced in C# and Java through Unity projects and collaborative applications. Currently developing a Nintendo Game Boy emulator in Java, integrating my knowledge of hardware-level systems and software design. My AI and machine learning experience includes PyTorch and MATLAB. I'm seeking opportunities with forward-thinking companies where I can apply my technical precision and creativity to impactful, design-led technology projects.

QUALIFICATIONS

University of Manchester: MSc in Advanced Computer Science 2026

Lancaster University: BSc in Computer Science: 1st (Hons) 2025

PROGRAMMING PROJECTS

GameDuck: Gameboy Emulator | Java | Open Source

Researched and developed a multi-platform emulator for the Nintendo Gameboy's Sharp SM83 processor, peripherals, and architecture with focus on hardware accuracy, performance, and user experience.

- Conducted research and analysis of the Sharp SM83 Processor, the Gameboy's peripherals, and IO systems.
- This project highlights the need for digital cultural preservation and Java-based emulation strategies for the platform, of which there are few.

Second Year Project: Less Powerful Point | Java | Lancaster University

Led a team-based research project focused on collaboration in software development, delivery methods and user-centred evaluation, with the aim to create a replica of Microsoft's PowerPoint.

- Managed a team of eight using an AGILE framework, focusing development on stakeholders.
- Delivered a final product that demonstrated the power of collaborative software development and scalable architecture.

Steganosaurus | Java | Open Source

Currently developing a piece of Steganography software called Steganosaurus, which allows for the obfuscation of data and files inside images.

- Designed a custom encryption system, which stores both a header or metadata and file data into the last bits of each pixel's RGBA values
- This project emphasises cryptography and my ability to manipulate data, demonstrating the power of creative encryption and cyber security.

ADDITIONAL INFORMATION

My website www.blackaby.uk is an interactive CV, highlighting my web development skills. I also completed Udemy course in game development in Unity [2024]. In addition, I am undertaking a Udacity PyTorch course and Udemy statistics course. I also have three years of experience working as a children's sports coach, where I developed leadership skills by organizing, supervising, and creating engaging activities for children.

Languages – English (Native); German (Working Standard); Arabic (Elementary)