Blake Eldridge

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EDUCATION

BSc. Computer Science *University of Manchester - On track for First Class (80%)* **2023-2026**

- Completed Microsoft's fundamentals of Azure AI and cloud computing certifications.

Relevant Courses: Fundamentals of Computer Engineering and Architecture, Processor Microarchitecture, Algorithms and Data Structures

A levels *Dame Alice Owens* **2021-2023**

- A* Mathematics, A* Computer Science, A Physics, A Psychology AS

EMPLOYMENT

Computer Science Tutor *Physics And Maths Tutor (Paid)* **2023-Now**

- Delivered over 50 personalized online lessons to GCSE and A-Level students, focusing on core computer science concepts, pseudocode, and Python programming.
- Designed tailored lesson plans, provided real-time feedback, and prepared students for exams, covering the entire syllabus.

Coding Tutor Team Leader *Code Ninjas (Paid)* **2021-2022**

- Taught hundreds of children to code games in JavaScript, Lua, and C#, fostering creativity and basic programming skills.
- Incorporated software such as Microsoft's Minecraft Makecode, Unity and Roblox Studio into the lessons.
- Lead camps of up to 20 children teaching topics such as Python, stop motion and Youtube.

PROJECTS

Interactive Game on MU0 Processor *Verilog, Assembly, Bennett, FPGA Boards*

- Engineered a custom-built MU0 processor, with a limited instruction set of 8 assembly commands, by developing sequential and combinatorial Verilog from RTL designs.
- Implemented a reflex-based game on FPGA hardware using MU0 assembly on Bennett, manipulated memory to allow for more flexible instructions to enable more complex load and store capabilities.

Gymnastics Routine Builder *(Personal Project) Javascript, React.js, Express.js, SQL*

- Established a user-friendly website using React.js for building custom gymnastics routines with automatic difficulty calculation.
- Enables users to save routines to personal collections to prepare for different competitions and view potential scores, created using an express.js API with an SQL database as the backend.

Genetic Algorithms Research *(Personal Project) Python, Neural Networks, Pygame*

- Developed neural networks using OOP, enabling self-improvement through evolutionary processes and machine learning, starting with path-finding algorithms to mastering games like Snake and Flappy Bird through genetic mutation and adaptation.
- Delivered a presentation of findings and project results to a class of 30, demonstrating a detailed analysis of the effectiveness of genetic algorithms and machine learning techniques in game AI.

Hackathons and Game Jams *Unity, C#, Godot, Git*

- **Ludum Dare 56**: Collaborated 6 other programmers and artists, building a story-driven Unity game, requiring teamwork, communication via Git technology and writing clean, maintainable code.
- **72-hour Solo Same Jam**: Developed a puzzle platformer game using the Godot game engine ranking 1st place in Theme.
- **Hackchester's 24-hour Hackathon**: Coordinated a team to create an educational website, focusing on front-end development.

LEADERSHIP

Gymnastics Society Treasurer

- Managed budget and allocation of funds for training, travel and events, tracked, analysed and reported expenses using Excel resulting in a profit of over £3000.
- Communicated with other committee members to organise and deliver gymnastics sessions to all abilities at the university.
- Contributes towards the University of Manchester's Stellify award and SVS volunteering awards.

HOBBIES

Gymnastics

Trained 24 hours a week for over a decade as part of the London gymnastics team. Participated at national and international competitions and now continuing by competing as part of the university team in BUCs and the University Gymnastics Cup becoming the Northern University Champion last season.

Mandarin

Pursued self-study of Mandarin Chinese for a year, followed by enrollment in the University's LEAP Chinese 2 course as an optional module to advance fluency. Previously achieved 199/200 in HSK1 and 182/200 in HSK2.