Patrick Hume

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EDUCATION

2020 - 2023	**The University of Manchester** BSc(Hons) Computer Science	(Exp. First Class)

Achieved over 85% in *Programming Languages & Paradigms, Algorithms & Data Structures, Fundamentals of Computer Architecture,* and *Fundamentals of Computer Engineering.*

2018 - 2020	**Jesmond Park West Academy** A-Levels	
	Mathematics	(A*)
	Computing	(A)
	Physics	(A)
	Further Mathematics	(B)
2012 - 2018	**Heaton Manor School** GCSEs	
	Further Mathematics	(A*)
	Mathematics	(9)
	Computer Science	(9)
	Physics	(9)

PROJECTS

2022–2023 Hydraulic Erosion Simulation *C++, OpenGL*

Developed a terrain generation application with C++ and OpenGL. The app allows users to model, enhance, texture, and export unique 3D terrain models by simulating the real world processes of hydrology.

2022–2023 Detail-Based Tessellation *C++, OpenGL* — Docs.

Wrote a C++ application capable of performing detail-based simplification of 3D terrain models using OpenGL and custom GLSL tessellation shaders.

2021–2022 AI Game Player *C++, Team Project*

Worked with 2 others to develop a C++ application capable of playing the board game *Hex* (an ultra-weakly solved, tile-based board game). Harnessed C++'s memory management tools to produce a performant AI capable of beating a human player.

2021–2022 Stendhal Development *Java, Open Source, Testing, Team Project* — stendhalgame.org

Contributed to a 10,000 line open-source Java code-base as a team of 6 people. Using Eclipse, Ant, JUnit and Jenkins to write unit and integration tests as well as implement game-play features. Learnt how to make reasonable time estimates for development as a team.

2020–2021 Browser-Based Online Game *Javascript, Node, Socket.io, Team Project*

Led a team of 7 to develop an online party game called *MicDrop*. Handled client-server communications using Node and Socket.io to allow players to join sessions and interact in real time.

2020–2021 3D Renderer *C++, SDL* — Docs.

Wrote a 3D renderer from scratch using C++ and SDL.

2019–2020 Shooter Game *Javascript* — Live Demo

Developed a top-down shooter game using only Javascript and the HTML5 canvas.

2019–2019 Krypt *Python, Pygame* — Docs.

Developed a 'dungeon-crawl' style game titled *Krypt* using Python and Pygame.

SKILLS

Programming Languages	C/C++, Javascript, Python, Java, and Bash.
Additional Skills	Frequent Git user and experienced team member.