

# Curriculum Vitae

**Jack Bulson**  
**Gameplay Programmer**

**Location:** Newcastle-upon-Tyne  
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## Personal Profile

Video games were a large part of my life growing up. They gave me new experiences, a way to escape and provided me with a sense of community. I grew up knowing that I always wanted to be part of the people that make them. I am a reliable, friendly, and hard-working individual, and enthusiastic to learn new skills and solve problems in order to create great experiences for people to play and enjoy. I enjoy working across disciplines to come up with solutions that serve everyone and make for satisfying experiences as the player.

## Experience

2024~ *Programmer, Sumo Newcastle*  
2022-2024 *Graduate Programmer, Sumo Newcastle*

Worked on a shelved project and then on DeathSprint 66 as the lone programmer in a small feature team. Later, I was moved to work on Critter Cafe once it moved past the prototype phase.

I was responsible for creating many of the puzzle ingredients, which required me to communicate with Design, Level Design and Art to ensure that everything worked for each discipline and that the ingredients fit their desired purpose. I also created the Tool system, which the player can use in conjunction with these ingredients to move through the level and solve puzzles.

## Projects

- 2022-2023 *Vulkan Engine*  
**Language:** Rust  
Worked on my own custom game engine using Rust & Vulkan. Added features such as: *Lighting & shadows, deferred rendering, bloom, particle systems, bindless rendering, renderlist(my own simplified version of a rendergraph, automated handling of render attachment resources, memory barriers), egui integration*  
**Link:** [jackbulson.dev/project/2024/06/10/vulkan-rust-game-engine.html](http://jackbulson.dev/project/2024/06/10/vulkan-rust-game-engine.html)
- 2020-2021 *4th Year University Dissertation*  
**Title:** Simulating Hydraulic Erosion on Procedurally Generated Terrain  
**Technologies Used:** C++ / Vulkan  
Created a tool that simulates water erosion(rain) on terrain. CPU and GPU implementations were compared for speed.  
**Link:** [jackbulson.dev/project/2022/06/20/hydraulic-erosion.html](http://jackbulson.dev/project/2022/06/20/hydraulic-erosion.html)
- 2020-2021 *3rd Year University Dissertation*  
**Title:** Near Infinite, Procedurally Generated Terrain  
**Technologies Used:** C# (Unity)  
Created a tool that procedurally generates terrain to compare using two different noise implementations (Perlin vs OpenSimplex). A custom shader is used to texture the terrain using height and steepness values from the terrain.  
**Link:** [jackbulson.dev/project/2021/08/30/procedural-terrain.html](http://jackbulson.dev/project/2021/08/30/procedural-terrain.html)

## **Education**

- 2018-2022     *MComp Computer Science (Game Engineering), Newcastle University*  
**Degree:** 1<sup>st</sup> Overall
- 2015-2018     *Macmillan Academy Sixth Form*  
**A Levels:** Maths(A), Computing(B) and ICT(B)
- 2010-2015     *Macmillan Academy*  
**GCSE:** 10 A-C Grades

## **Technical Skills**

### ***Technology***

C++ / Rust / GDScript  
Vulkan / OpenGL

### ***Software Experience:***

Unreal Engine / Godot / Unity / RenderDoc  
Perforce / GitHub

### ***Techniques:***

Implementation of 3D physics system  
Implementation of AI using state machines and behaviour trees  
OpenGL Graphics Scene – Deferred Rendering / Real-time Shadows / Water