

Aspiring game developer with a background in computer science. Experienced in Unity and OpenGL based games through university, game jam, and personal projects. Particularly interested in destructible terrain and cooperative multiplayer.

Work Experience

Amazon: Software Development Engineer intern for 11 weeks from Jun-Sep 2019.

Designed, built and deployed a web app using Java Spring and jQuery. Gained experience with test driven development, continuous integration and deployment, and peer code reviewing.

Education

MSc Computer Games Technology, City University of London Sep 2019 - Oct 2020

Final result pending, average module score 87% (1st class)

BSc Computer Science, University of Warwick, 1st Class Oct 2016 - Sep 2019

Technical Skills

Programming languages: C#, C++, Java, GLSL, Python, Javascript

Game Technologies: Unity, OpenGL, Monogame

Misc: Event-driven and data-driven architecture, architectural design, physics & collision detection, multi-pass rendering & post-processing effects, unit testing, code reviewing, performance optimisation, procedural generation, parallel processing

Key Projects

- **“Orbital” 2D arcade shooter/ tower defence hybrid made in Unity, published on Itch.io**
 - Sprite-based animation using Unity Animation system
 - Designed and implemented 6 enemy types and 3 towers, each with multiple upgrades
 - Data driven enemy wave configuration and spawning
- **Voxel Terrain Engine for Unity:**
 - Simplex noise based heightmaps, biomes, caves, ores and trees
 - Used Unity Job System and Burst compiler for parallel processing
 - Procedural mesh generation, with UV coordinates and lighting data
 - Custom shaders with support for sunlight (with time of day effects) and point lights
 - Extensive unit tests via Unity Test Framework
- **3D Tower Defence in OpenGL:**
 - FSM-based enemy AI with pathfinding, flocking and predictive aiming behaviours
 - Use of FMOD for spatial audio, and Bullet for physics
- **Sci-fi Track Racing in OpenGL**
 - Management of OpenGL buffers for hundreds of objects using instanced rendering
 - Vertex and fragment shaders for Phong shading and special effects, including bloom and motion blur
 - Extensive use of 3D vector and matrix mathematics for both object and camera positioning

Hobbies & Interests

In my free time I like to work on my own game projects and attend game jams when possible. I attended Global Game Jam 2020 with a small team of my MSc colleagues and greatly enjoyed the collaborative and creative experience. When I'm not doing something game related, I enjoy long distance running, martial arts and 'exotic activities' which have so far included indoor skydiving, flying 3 different types of aircraft, scuba diving, and blacksmithing my own sword.