Jacob D Taylor

Portfolio: blastinghavoc.github.io/portfolio
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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.

References Available on Request