Jacob D Taylor

Contact

Portfolio: blastinghavoc.github.io/portfolio
Email: taylj024@gmail.com
Mobile: 07904 790048

Profile

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

Work Experience

Amazon: Software Development Engineer intern for 11 weeks from Jun-Sep 2019. Designed, built and deployed a web app for internal use using Java Spring backend and jQuery frontend. Gained substantial 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 — Oct 2016 - Sep 2019
1st Class

Technical Skills

Programming: C#, C++, Java, GLSL, Python, Javascript
Game Tech: Unity, OpenGL, Monogame

Key Projects

- **C#/Unity**:
  - **Voxel Terrain Engine**: My final project for my MSc was the development of a procedural voxel terrain engine in Unity. This included the implementation of multiple meshing algorithms and voxel datastructures, and the development of automated performance tests to compare their efficiency. The resulting voxel framework features Scriptable Object based configuration of biomes, voxel types, and trees all designed with extensibility in mind. Along the way I gained experience with several Unity subsystems, including the Job System (with Burst compiler), the Unity Test Framework, the Scriptable Object system and the UI system.
  - **Arcade Shooter**: During my MSc I developed a prototype for a casual 2D arcade shooter/tower defence hybrid called Orbital. I used self-made sprites and animations alongside public domain sound effects to produce a working prototype in 7 days. I am continuing this project in my spare time, and it has been released as a work-in-progress on Itch.io (see my portfolio). The current version includes 6 enemy types, 3 towers and the player, with all the allied units having multiple upgrade paths that greatly change their gameplay and cater to different playstyles. From this I have gained experience in game design, game architecture, and the deployment of a web-based game.

- **C#/Monogame**: During my MSc I developed a small game engine for a 2D platformer. This focused on an event-driven architecture backed by data-driven (XML) configuration. This also gave me experience with collision detection and resolution, and finite-state-machine based AI and animation control.

- **C++/OpenGL**:
  - **3D Tower Defence**: One of my MSc projects involved expanding a basic OpenGL template program into a full game demo. I create a third-person tower defence game in which the player designs the maze through which enemies travel. The player can directly attack enemies as well as placing defensive towers. Enemy AI includes pathfinding, flocking and predictive aiming behaviours. Collision detection was achieved with the assistance of the Bullet physics engine. From this I gained substantial experience in developing a game engine 'from scratch' in C++.
  - **Sci-fi Track Racing**: This project focused on OpenGL graphics programming. The game features a procedurally generated 3D track with obstacles and pickups to collect. Performance is achieved through instanced rendering and object pooling. I gained experience managing OpenGL buffers, writing GLSL shaders for lighting and special effects, and using multi-pass rendering for post processing effects (including bloom and motion blur).

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

MOBILE 07904 790048
E-MAIL TAYLJ024@GMAIL.COM