Landon Townsend

Video Game Programming

landon.townsend@gmail.com | 971-218-5533 | http://www.landontownsend.com

Skills

- C++ Programming
- C# Programming
- Python
- OpenGL / GLSL / HLSL
- Unreal Engine
- Unity Engine
- Linear Algebra / Calculus
- Rendering and 3D

Professional Experience

Unity Technologies — June 2019 – July 2021

Graphics Test Engineer

- Tester for Shadergraph and Terrain – writing shaders and testing features and UI
- Reviewing PRs, teaching developers how to test, writing test documentation
- Complex knowledge of linear algebra, hlsl, transformation spaces, etc. to find potential problems with existing nodes and tests, and maintain parity of quality with new features
- Some collaborative development work with shaders, small game prototypes, and other programming projects; custom shadow shader was used by AR Foundation

Quantum Squid Interactive — April-October 2017

Programmer

- Unity prototyping, custom physics written in C#
- AI, animation systems and movement routines for both Unity and Unreal Engine 4
- Particle effects in Unity and Unreal Engine 4
- Gameplay design for enemy and player mechanics
- Customized shaders in both Unity and Unreal Engine 4

Related Experience

"Super Impostor Shader" — January – February 2022

- Faithfully recreates a 3D object using only 2D reference images and depth textures
- Shader runs in real time, multiple innovative systems of optimization created from scratch
- Uses a heavily modified raymarching algorithm
- Extremely high quality reproduction that can recreate millions of polygons worth of detail onto a 12 poly cuboid, great for low poly budgets and GPU instancing
- Can combine multiple cameras with different lighting situations due to specular and reflections
- Supports non-uniform scale, rotation, and translation of the rendered object
- Details for creation process, results, and how it works on website

Escape time fractal program — December 2021

- Written entirely in C++ using ImGui framework
- Support for several pre-written fractal equations as well as creating your own equations
- Multi-threaded to take advantage of multiple CPU cores
- Efficient use of data structures including a custom data structure for fast execution of custom math code created at run time by the user
- Used to practice implementation for several common programming algorithms such as the Fast Fourier transform

Education

The Art Institute of Portland, Portland OR — Graduation: Winter 2017

Bachelor of Science in Visual Game Programming