Logan Harvell

Game Programmer (407) 462-2434 | logan@harvell.biz | logantharvell.github.io

Technical Skills

Languages: C/C++, C#, Assembly, Bash, Lua
Engines: Unreal Engine 4 (UE4), Unity
Versioning: Perforce, Git
IDEs/Tools: Visual Studio, XCode, Jira

Experience

Studio Chili Orlando, Florida
Keepers of the Trees, Lead Programmer *Dec. 2019 – Present*

- Created a local co-op puzzle platformer with a team of 21 people in **UE4**, releasing for PC in August 2020.
- Coordinated the programming team, while working with other leads to facilitate interdisciplinary collaboration.
- Designed a flexible co-op camera system in **C++** with customizable follow behavior that is modifiable at runtime.

University of Central Florida Orlando, Florida
Institute for Simulation and Training, Research Assistant *Dec. 2018 – Aug. 2019*

- Built a plugin wrapping GDAL library functionality for reading geospatial data using **C++** into **UE4**.
- Designed an Unreal editor tool for generating procedural meshes and dynamic materials from data embedded in GeoTIFF files that map to a database containing physically based material attributes.
- Designed a component that applies and manages a dynamic material to the owner's mesh that adjusts parameter values of the material, i.e. increasing emissivity to simulate heat absorbed over a time interval for infrared views.

Boy Scouts of America Winter Park, Florida
Eagle Scout *Sept. 2014*

Projects

C++ Game Engine Development Jan. 2020 – Present

- Created linked list, vector, hash map, and various adapter containers modeled after STL counterparts.
- Designed a runtime data reflection system using a custom runtime type information class.
- Implemented a parser to support **data-driven** development with **JSON** as a configuration language.
- Recreated the battle mode of Super Bomberman in the engine and **OpenGL** with five other programmers.

Adaptive Training Sim Jan. 2020 – Apr. 2020
A proof-of-concept prototype created for the Federal Law Enforcement Training Center (FLETC) in **UE4**. Players drive a police vehicle to specified locations while completing tasks with difficulty conditions controlled over a TCP connection.

- Designed a waypoint system that uses node-based weighted graphs to represent city traffic networks.
- Implemented **A*** pathing in **C++** to calculate routes using the waypoint system representing a car GPS system.

Bounce Off Oct. 2019
Conceptualized and implemented a head-to-head, real-time competitive game written from scratch in **68K assembly**, running on the EASy68K emulator. Players use momentum-based movement to control balls that bounce off all surfaces, including each other, while they aim to be the first to pick-up randomly spawning points.

Astral Pathfinder Jan. 2018 – Sept. 2018
Created a real time strategy game inspired by the classic resource management game Hammurabi. Players explore and colonize planets and respond to random events while managing resources to maximize their population for a high score.

- Prototyped in **C** with **ncurses** as a text-based game, then re-invented GUI-based in **C++** with **SDL2** frameworks.
- Built an interface to use **Lua** as a configuration language to support data-driven parameters.
- Implemented procedural planet map generation and population growth mechanics based on real-world models.
- Designed a generic collision component class with circle, axis aligned, and oriented box collision functions.

Education

University of Central Florida, Florida Interactive Entertainment Academy Orlando, Florida
M.S. Interactive Entertainment, 4.0 GPA Aug. 2019 – expected Dec. 2020

University of Central Florida, College of Engineering and Computer Science Orlando, Florida
B.S. Computer Science, Cum Laude, 3.78 GPA Aug. 2015 – Dec. 2018