Louis Hong

Links and Contact

honglouis97@gmail.com
linkedin.com/in/louisgames
https://medium.com/@louisgamedev

Language

- C++
- Java
- HTML/CSS/JS
- SQL
- C
- C#
- GLSL/HLSL/ShaderLab
- Python

Mathematics

- Linear Algebra
- Curves and Surfaces
- Data Visualization
- Statistics
- Data Science

Software Engineering Concepts

- Data Structure & Algorithm
- MVC & MVVM
- Entity Component System
- Object Oriented Design
- Continuous Integration
- REST / TCP / UDP
- Ray Marching
- Data Oriented Design
- IOC/Dependency Injection

Tools

- git
- vim
- Unity Engine
- Xcode
- Jenkins
- Linux
- ssh
- ShaderGraph
- Android SDK
- Doxygen

Work

Software Engineer — Seattle, WA
MXTReality, MyPad3D Inc. — Apr 2019 - Jul 2019

- Developed AR Souvenir Camera App using C#, Unity, ARFoundation, ARKit, ARCore for souvenir camera app for tourists at Space Needle.
- Designed inspectors using Unity, C#, empowering non-technical designers to easily adjust settings of wheel-chair simulation.
- Communicate and understand clients needs in order to translate into project systems, fulfilled those needs and delivered products to close contracts.
- Created VR wheel-chair simulation matching with real breath-controller (sip&puff) electric wheelchair using C#, Unity, TrackedPostDriver, assisting quadriplegic patients' rehabilitation on electric wheel-chairs at Seattle Children's Hospital.

Unity Projects

Software Engineer — Mar 2019 - Aug 2019
ASTEROIDS 2, PC Game in C#, Mind Bending 3D Asteroids in Unity Engine

- Utilized Gizmos, Inspectors, Editors to assist building gameplay and optimize performance in a non-traditional 3D scene.
- Scripted wrapped infinite 3D space system in Unity Engine to deliver a mind-bending 3D version of the classic game "asteroids".
- Integrated GameObject-Pooling to save memory allocation and object initialization overhead for recycled GameObjects
- Optimized rendering of large amount of 3D meshes by using Instancing and Batching to achieve optimal performance for players.
- Created networked global high-score using REST APIs with online services to drive engagement and help foster competitive player community.

Software Engineer — Feb 2019 - Mar 2019
AR Shooter, Mobile Game in C#, Experimental Mixed Reality Shooter Gameplay

- Invented VR room-space FPS gameplay on iOS by leveraging ARKit SLAM to create novel gameplay experience with existing technology for the player.

Software Engineer — Mar 2018 - Aug 2018
SKRRT, Mobile 3D Infinite Runner, built in Unity Engine, C#

- Created procedural-generation tool for gameplay, leveraging Behavior-Tree's ability to design behavior visually, allowing non-technical designers to adjust and design procedural-generation for infinite runner.
- Built continuous integration system with Jenkins and git hooks to automatically build the main branch commits by piping my Unity project in headless mode through Unity, Xcode, then deploy the *.ipa package to TestFlight for distribution and testing, all automatically; Achieving streamlined publishing workflow.
- Designed infinite runner touch screen controls to allow users with a limited fidelity interface to experience fast-paced high-accuracy action game.
- Created VFX and Shaders for vehicle and collectables by utilizing local adjustments to material emissions in object-space and one-shot particles to achieve a scanning glow on the vehicle when nitro is collected.

Academic Projects

Software Engineer — Feb 2017 - Apr 2017
RAILZ, An arcade game for PC, built in Custom Engine, C language

- Lead and planned production under strict deadline for a team of five, consisting of engineers and designers to deliver quality end product.
- Utilized data-driven design and ECS architecture game engine using C for optimal cache performance and plug and play component decoupled systems for gameplay logic.
- Scripted combat system using ECS to allow for a variety of weapons and bullets to reuse the same system and events effectively and efficiently, including guided missiles, shotgun, and machine gun.
- Scripted stage management system using ECS to allow for multiple unique stages to use the same underlying stage management system effectively and efficiently.
- Present to live audience at PAX West 2017 and interviewed on KOMO news representing and publicizing my college.

Education

Bachelor of Science: Computer Science in Real-time Interactive Simulation — Expected in Apr 2021
DigiPen Institute of Technology

The RTIS program emphasizes applied Software Engineering in the context of game technology development, 3D math, C/C++, graphics and physics programming, and year-long game projects.