Calliope **Davies**

Gameplay Programmer · Graphics Programmer · Tools Programmer

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Skills

Languages C/C++, C#, Java, JavaScript/TypeScript, Python
Frameworks/APIs OpenGL, Simplygon, XNA, MonoGame, SDL, Google Analytics
Software Unreal Engine 4, Unity, Autodesk 3ds Max, Perforce, Git, Jenkins

Experience

Harebrained Schemes — June 2020 - June 2023

Core Tech Team *Unity/Python*

Software Engineer - Core Tech (Graphics/Tech Art)

- Developed studio-wide packages to assist game teams with getting art assets into Unity.
- Made Unity tools to procedurally generate flowmap textures for bodies of water from level geometry, replacing hand authored assets.
- Made Unity libraries to centralize debug drawing and audio synced video playback functionality.
- Led effort to standardize studio Python practices and tools to ensure maintainability, security, and performance.
- Helped test and establish a studio-wide Python package server and corresponding Jenkins scripts to deploy complex packages to it.
- Built Python libraries and tools for project management and organization to make a unified development flow for artists and programmers.

The Lamplighter's League *Unity/Python*

Software Engineer - Core Tech (Graphics/Tech Art)

- Worked with game team artists and engineers to design and integrate studio-wide tooling.
- Evaluated LOD solutions for environment assets for use as part of automatic asset pipeline processing.
- Built extendable and maintainable standalone Python utility for postprocessing environment art assets.
- Retrofitted existing, game-specific Unity pipeline tools to support LODs, including batch reprocessing thousands of existing assets.

Fun Bits Interactive — May 2016 - Mar. 2020

Squids From Space! *Unreal Engine 4 - PC*

Lead Programmer *Sept. 2019 - Mar. 2020*

- Led and coordinated programming and technical effort during progression through Early Access and migration into F2P model
- Optimized game server to improve AWS spinup time, server framerate, and network load
- Built in-editor and external pipeline tools for improving content iteration time and increasing content maintainability

Programmer *Oct. 2016 - Sept. 2019*

- Built and optimized gameplay systems to support large numbers of simultaneous networked players
- Refactored large gameplay systems across project for improved performance and better maintainability
- Worked with animators to build complex animation logic systems for player pawns and NPCs
- Worked with artists and designers to build large scale player cosmetics and customization system
- Developed systems to efficiently record game and player statistics and present data meaningfully to designers using Google Analytics
- Built backend system using PlayFab to handle player persistent state and coordinate dynamic gameplay data for game servers

First Contact - Oculus Quest Port *Unreal Engine 4 - Oculus Quest*

Graphics Programmer *Jan. 2019 - May 2019*

- Led graphics optimization in port of Oculus Rift game to Oculus Quest
- Coordinated and assisted mesh, texture, animation, and effect optimizations with art team
- Modified UE4 graphics code to allow switch from fully dynamic to almost fully static lighting without substantial quality impact
- Massively reduced material complexity and texture samples across all graphical assets
- Instrumented graphics performance over duration of project to track improvements and identify graphical bottlenecks

Oculus Touch NUX Localization *Unreal Engine 4 - Oculus Rift*

Programmer *May 2018 - Sept. 2018*

- Built pipeline tools in Python for rapidly iterating on and testing localization for 20+ new languages

Education

DigiPen Institute of Technology *Redmond, WA*

Master of Science, Computer Science, 3.58 GPA *Fall 2014 - Spring 2016*

Eastern Washington University *Cheney, WA*

Bachelor of Science, *cum laude*, Computer Science, Minor: 3D Animation & Modeling *Fall 2010 - Summer 2014*