Branden Turner

Software Developer

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Objective: A position as a software developer writing performant, reliable code in tools and customer-facing software

Highlights

- Designed and implemented an engine release and automated testing pipeline with a team to ship Star Wars: Millennium Falcon - Smuggler's Run
- Extensive experience with Unreal Engine 4, including writing large plugins, modifying engine-level features, and integrating third-party libraries
- Created camera sequence and path editing tools for content creators, which allowed them to create in-game and cinematic cutscenes unassisted
- Integrated motion tracking systems, projection systems, calibration data, and game engines to create experiences

Career History

Imagineer (Software Developer), Walt Disney Imagineering — February 2015 – Present

Working within the Technology Studio to bring new experiences into Disney Parks and Resorts, while creating tools and workflows to develop these experiences more effectively. Projects include Star Wars: Smuggler's Run, collaborating with ILMxLAB, Web Slingers, and unannounced projects that combine hardware and software while maintaining performance. Primary languages include C++ and Python, with smatterings of HTML/CSS/JS and Groovy.

Game Developer, Good Mood Creators — September 2012 – February 2015

GMC was a small startup game studio where I programmed systems including game logic, tools, graphics, animation, and AI. Primary languages included C# and CG Shaders, with some Python and Pymel for tools. Communication was a central part of this job, since it was a small team that needed a lot of custom tools that worked with various software, from game engines to 3D content creation packages.

Projects

Integration Software Developer — June 2019 – Present

WEB SLINGERS: A Spider-Man Adventure

- Reviewed and gave actionable feedback for technical documentation and code
- Authored technical documentation detailing the interactive systems of the attraction for future developers, engineers, and maintenance crews
- Implemented runtime engine features, and integrated the attraction with a custom test framework to monitor its rendering performance
- Prepared for and assisted technically with multiple demos per week to sometimes wildly different audiences

UE4 Motion Tracking Integration Consultant — March 2016 – May 2016

Flesh and Sand (Carne y Arena) - A VR Experience from ILMxLab and Alejandro González Iñárritu

- Provided my implementation of a motion tracking plugin for use with UE4, used during the early development phase of the project
- Assisted with integration and use of motion tracking plugin for the iteration of the early creative elements of the project

Generalist Software and Tools Developer — April 2015 – May 2019

Star Wars: Millennium Falcon - Smuggler's Run

- Developed UE4 Automated Testing pipeline, including a set of plugins for UE4, a set of test scripts, and a website for viewing test information
- Created tools for viewing media virtually in an environment that mimics the ride's physical projection setup, saving in travel costs
- Debugged various issues that developed during the project, including Sequencer bugs, content ingestion problems, and determinism issues

Projection System Designer and Integrator — April 2015 - February 2016

ILMxLAB's xDeck (Virtual Production Stage)

- Designed the projection layout for a CAVE system that leverages a smooth, curved surface for display, using internal tools and Maya
- Mounted, installed, and performed intrinsic and extrinsic calibration on cameras and projectors using Gray Code imagery
- Designed and tested, with a team, a pipeline for generating calibration files that could be ingested by UE4, as well as other 3D Content packages
- Specced and assisted with install of hardware elements of the system including computers, projectors, cabling, cameras, and KVM equipment

Generalist Game Programmer — September 2012 – February 2015

Mekazoo: 2.5D Platformer in the Unity Game Engine (Unity 4/5)

- Designed and implemented 3D camera system and tools including trigger volumes, scripted events, and keyframe animation (C#, Python, HLSL)
- Developed creative tools to be used within Maya, 3DsMax, and Unity, working with users for iterative feedback
- Co-architected and implemented gameplay systems and multiple character controllers (C#)
- Responsible for debugging a large portion of the performance issues encountered (C#/C/C++)

Technical Skills

Tools - Git, SVN, Mercurial, CVS, Perforce, Jira, Visual Studio, GCC, Makefiles, Command Line, Confluence, VPNs
Mathematics - Linear Algebra, 2D/3D Geometry, Discrete Logic, Splines, Statistics, Numerical Approximation
Familiar APIs - OpenGL, DirectX, FMOD(ex), FBX SDK, VRPN, WWise (Authoring Plugins)
Miscellaneous - Profiling, crash handling, technical documentation, automated testing, networked simulation, optimization, debugging
Languages - C/C++ (proficient), Python (proficient), JavaScript (comfortable), C# (comfortable), Groovy (prior experience), x86 (reading)

Education

DigiPen Institute of Technology, B.S. CS and Real-Time Interactive Simulation — **Graduated 2013**