

# Branden Turner

Software Developer

Los Angeles, CA   [branden-turner.github.io](https://github.com/branden-turner)   [brandencturner@gmail.com](mailto:brandencturner@gmail.com)

**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 test pipeline with a team to ship Star Wars: Millennium Falcon - Smuggler's Run
- Extensive experience with Unreal Engine 4 writing 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

Feb. 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: Millennium Falcon - 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

Sept. 2012 – Feb. 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 – Feb. 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 and other 3D Content packages
- Researched and assisted with install of hardware including computers, projectors, cabling, cameras, and KVM equipment

### Generalist Game Programmer

Sept. 2012 – Feb. 2015

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

- Designed and implemented 3D camera system and tools with 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)

**Languages** - C/C++ (proficient), Python (proficient), JavaScript (comfortable), C# (comfortable), Groovy (prior experience), x86 (reading)

**Miscellaneous** - Profiling, crash handling, technical documentation, automated testing, networked simulation, optimization, debugging

## Education

DigiPen Institute of Technology, B.S. CS and Real-Time Interactive Simulation

Graduated 2013