

A programmer with a passion for testing out novel technologies and seeing if I can integrate them into a usable product. My main focus is geared towards Unreal Engine and using it to develop tools and real time applications.

Work Experience

Senior Developer	Steamroller Technologies Mount Dora, FL	Oct 2023–Present
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- Provided Unreal support for developing an Android thin client that makes use of Unreal's pixel streaming.
- Integrated ORB SLAM3 into Unreal via a plugin for said client to get around ARCore's device limitations.
- Developed a prototype Shotgrid config that uses version control instead of a centralized studio network drive.

Software Engineer	Pure Imagination Studios Sherman Oaks, CA	2016–2023
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- Wrote and maintained the Unreal frameworks for a majority of dark rides and attractions while working here.
- Wrote gameplay code and implemented art assets from Maya into Unreal for a majority of rides and attractions.
- Built systems inside Unreal for off-axis camera projection via direct modification of the engine source and also through nDisplay.
- Integrated third party libraries and software into Unreal by writing modules and plugins and creating wrappers to allow native c++ code to interact directly with Unreal.
- Developed both Unreal and Unity standalone attractions for museums, exhibits, and amusement parks.
- Helped build their Shotgrid pipeline for both real time and rendered content.
- Developed attraction prototypes using image processing technologies like OpenCV and Stereolabs Zed cameras.

Cofounder	AntiCode Phoenix, AZ	2016–2023
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- Co-founded a company that developed an isomorphic web application specifically for aiding programmers with their debugging issues
- Developed a full stack application with a React frontend and a Django REST API backend for some reason.
- Built a bug bounty system for the site that would take advantage of chained Paypal transactions to provide a revenue stream to support the website.

Research Assistant

WPI
Worcester, MA

2014–2014

- Worked on building a virtual reality oil rig simulator system
- Modified the C4 engine to include haptic rumble feedback via ultra low frequency audio for more immersive simulation

Education and Certifications

- **B.Sc. Interactive Media & Game Development**, WorcesterPolytechnic Institute, Massachusetts. 2011–2015

Technologies and Languages

- Languages: C++, C, C#, Java, Javascript, Python
- Technologies: Unreal, Maya, Unity, Git, Perforce, nDisplay, Shotgrid, Android Studio, Stereolabs, OpenCV

Projects

- **Android Thin Client** Helped develop an Android thin client that would make use of Unreal's pixel streaming feature to stream gameplay to the android device from an Unreal instance running on a linux server. Built systems to integrate Google's MediaPipe, Ultraleap's hand tracking, and ORB SLAM3 into Android to allow for the device to provide user inputs to the Unreal instance directly from the Android thin client.
- **Villain Con Minion Blast** Built a system for synchronizing nDisplay events across nodes, and also built a system to deproject from real world screen space to 3D game space that would account for curved screens and the nDisplay pixel shaders being used.
- **Vokanu - Quest for the Golden Idol** - Wrote the underlying framework that the game was built upon along with a decent amount of the gameplay. Also built a system for off-axis camera projection that doesn't require modification to Unreal's source via nDisplay.
- **JUSTICE LEAGUE: Battle for Metropolis** Implemented off-axis matrix projection via an Unreal source build driven by data exported from a recreation of the ride track in Maya. Created a system for dynamically scaling projection screens when attempting to project them onto moving targets. Also worked on general gameplay and built tools that I used for tuning the media aspect of the ride on site.
- **Reese's Cupfusion** Wrote and integrated everything besides lighting and materials for the project. Tested out implementing Nvidia-Flex for fluid simulation and installed on site.
- **Critter Cam** helped develop an Unreal puppeteering system where an actor would control the movements of a virtual panda, and all facial data would be captured from the actor and mapped onto said virtual panda allowing them to talk as the panda. Created the fur for the panda via Nvidia Hairworks and trained staff on how to build real time remapping profiles and how to operate the project.
- **Dinosphere** Developed a system for scanning colored in pictures of dinosaurs and applying said drawing to the UVs of animated 2D dinosaurs that would roam the screen of the attraction.
- **Batman Bat-Tech Edition mobile** Developed an atlas tool for Maya to generate a V-Ray lighting atlas that could be applied to a secondary UV channel of the meshes to get around Unity lightmap limitations.