

## Education

**Rensselaer Polytechnic Institute – Troy, NY**

**August 2017 to May 2020**

- Bachelor of Science – Dual major, **Computer Science**, Games and Simulation Arts and Sciences. 3.54 GPA.

## Experience

**Amazon Web Services – Software Development Engineer Intern**

**June 2019 to August 2019**

- Created a **paginated API** function in **Java** that displays history information on a CloudWatch **Application Insights** application. Customers can filter history data by timestamp, event type, and other parameters.
- Wrote design documents, designed **DynamoDB** database schema, and modified **Lambda** functions to write data to the datastore.

**Amazon – Software Development Engineer Intern**

**June 2018 to August 2018**

- Designed a webpage using **AngularJS**, **Ruby on Rails**, and **HAML** that allows users to filter their development resources by permission type and view which project the selected resource belongs to.
- Developed project from concept to release, created design documents, led product design meetings, wrote **unit tests**, participated in **code reviews**, communicated with users for product feedback and feature ideas.

## Projects

**GPU Photon Mapping**

**July 2019**

- Developed a **path tracer** and **photon mapper** in **Swift** utilizing **Metal compute shaders** and ray tracing library. Photons are stored as triangles in an **MPSTriangleAccelerationStructure** and gathered on the **GPU** via ray casts.

**Balloon Simulation**

**May 2019**

- Developed a **C++ mass-spring balloon simulation** application. Wrote code for **obj loading**, **spring generation**, and **collision detection**. Wrote a nine page **technical paper** describing application features.

**Duality**

**January 2019 to May 2019**

- A 2D **co-op platformer** developed by a five person team in **Unity**. Developed all **3D models**, some **textures**, **level designs**, cutscene layout, some **gameplay and cutscene code**, and a **Unity surface shader**.

**Plasma Ball**

**December 2018**

- A recreation of a plasma ball implemented in **WebGL**. Wrote **vertex and fragment shaders** in GLSL ES.

**PyMEL Cherry Blossoms**

**November 2018**

- A **Python** script that adds cherry blossoms to a tree model in **Maya**. Used script to generate flowers for a Maya scene that was rendered with **Arnold**.

**OXIO**

**September 2017 to June 2018**

- A **puzzle game** developed using **Swift** and **SpriteKit** for **iOS** and **macOS**. Created a real-time **level editor**. **OXIO** received a **WWDC scholarship** in 2018.

## Skills

C++	Metal	SpriteKit	Python	HAML	Java	Substance Painter
WebGL	OpenGL	Swift	Arnold	AngularJS	DynamoDB	JavaScript
Unity	PyMEL	PySide (QT)	Maya	Ruby on Rails	AWS Lambda	Mockito

## Hobbies and Interests

**Programming Competitions**

**Kingdom Hearts (video game)**

**Jigsaw Puzzles**

**Ghost Adventures (TV Show)**

**Computer-Animated Films**

**Baking and Cooking**