

# Michael Kelly

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## Experience

### Amazon Web Services – Software Development Engineer Intern

June 2019 to August 2019

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

### 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

### Pandora's Box

November 2019 to May 2020

- A mixed reality **escape room** developed in a **CAVE** using **Unity** and Vicon **motion capture** technology. Worked as **puzzle designer** and programmer. Winner of the **Technical Excellence Award** at RPI GameFest 2020.

### AR Camera Layout Tool

January 2020 to May 2020

- A **PyMEL Maya** plugin and **RealityKit** augmented reality app that displays Maya scenes in AR, records the position of the AR camera, and generates keyframes on a Maya camera based on the AR camera's position.

### GPU Photon Mapping

July 2019

- A **path tracer** and **photon mapper** written in Swift using **Metal ray tracing** APIs and **compute shaders**. Photons are stored as triangles in a **MPSTriangleAccelerationStructure** and gathered on the **GPU** via ray casts.

### Balloon Simulation

May 2019

- A **C++ mass-spring** balloon **simulation** application. Worked with a partner and wrote code for **model loading**, **spring generation**, and **collision detection**. Wrote a nine-page **technical paper** describing application features.

### Plasma Ball

December 2018

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

### 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.

## Education

### Rensselaer Polytechnic Institute

August 2017 to May 2020

- Bachelor of Science, **Computer Science** and Game Design. **3.6 GPA**.

## Skills

C++	Swift	HTML/CSS	Python	RealityKit	PySide/PyQt	Maya	Houdini
Metal	JavaScript	Java	WebGL	ARKit	PyMEL	Unity	Arnold

## Hobbies and Interests

Corgi Dogs

Kingdom Hearts (video game)

Jigsaw Puzzles

Ghost Adventures (TV show)

Computer Animation

Baking and Cooking