Michael Kelly

Portfolio: www.haelmichael.com
Email: kellyme213@gmail.com
LinkedIn: kellyme213
GitHub: kellyme213

Experience

Apple – AR/VR Rendering Engineer   December 2020 to present
- Working on the RealityKit graphics team.

Amazon Web Services – Software Development Engineer   July 2020 to December 2020
- Worked on the **AWS Launch Wizard** team and integrated Launch Wizard with Systems Manager Application Manager. Collaborated with other teams, created design documents, and wrote code in **Python** and **Java**.
- Developed new **CI/CD** pipelines and utilized **AWS** services like **Lambda**, **CloudFormation**, **DynamoDB**, and **Systems Manager** to implement new features.

Amazon Web Services – Software Development Engineer Intern   June 2019 to August 2019
- Worked on the **CloudWatch Application Insights** team and created **ListConfigurationHistory**, a **paginated API** that returns monitoring data created by the service. Users can filter data by timestamp and other parameters.
- Implemented features in **Java**, wrote **unit tests** with over **95% code coverage**, designed a **DynamoDB** database schema, and modified **Lambda** functions.

Projects

Intro to Sampling   August 2020 to October 2020
- An **interactive webpage** explaining sampling concepts like **stratified sampling** and **importance sampling**. Created **2D interactive visualizations** in **JavaScript** and **HTML Canvas** to describe different sampling strategies.

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**.

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**