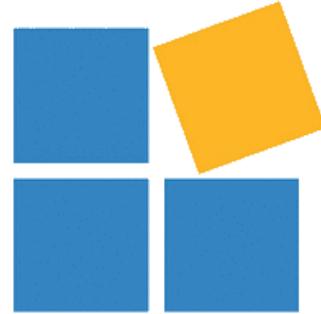


# GIRS

Software Engineer Intern, April 2019 - Present

The B. John Grarrik Institute for The Risk Sciences (GIRS) is a research lab at UCLA that studies the quantification and management of the risk of complex natural and engineered systems and processes.



## Role



I officially joined GIRS as a student researcher, but the actual work was more like a front-end software developer. At GIRS, I was developing a system reliability analysis web application (HCLA) for NASA's Jet Propulsion Laboratory (JPL). I worked there during school year for part-time, and full-time during the summer.

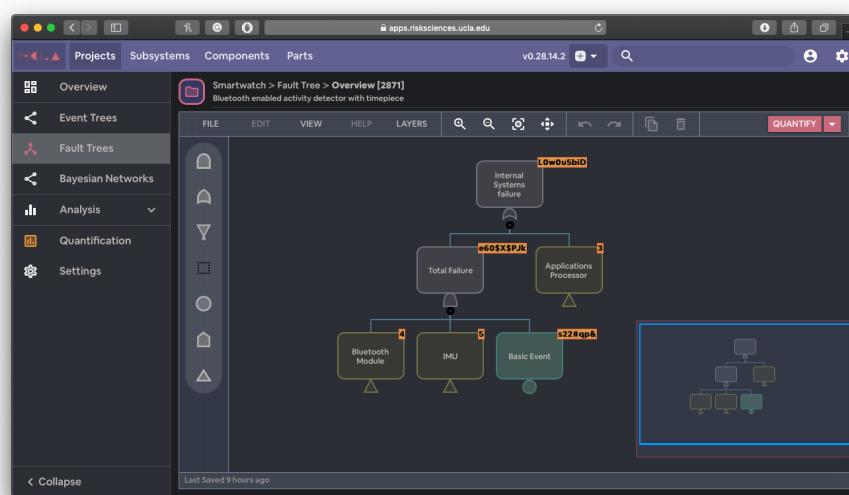
## Process

I only had limited experience in web development, and also had no prior experience with React. The first few weeks in the lab, I spent time just learning React, and tweaking the design of small things (e.g. button) slightly.

A screenshot of a web browser displaying the 'Projects' page of the HCLA system. The URL is 'apps.risksciences.ucla.edu'. The page has a dark theme with a purple header bar containing 'Projects', 'Subsystems', 'Components', and 'Parts'. Below the header is a search bar and a 'NEW' button. The main area shows two projects: 'Smartwatch' (last updated 7 days ago) and 'Auto Braking' (last updated 1 week ago). Each project entry includes a small circular icon with a letter (S for Smartwatch, A for Auto Braking), the project name, a brief description, and a timestamp.

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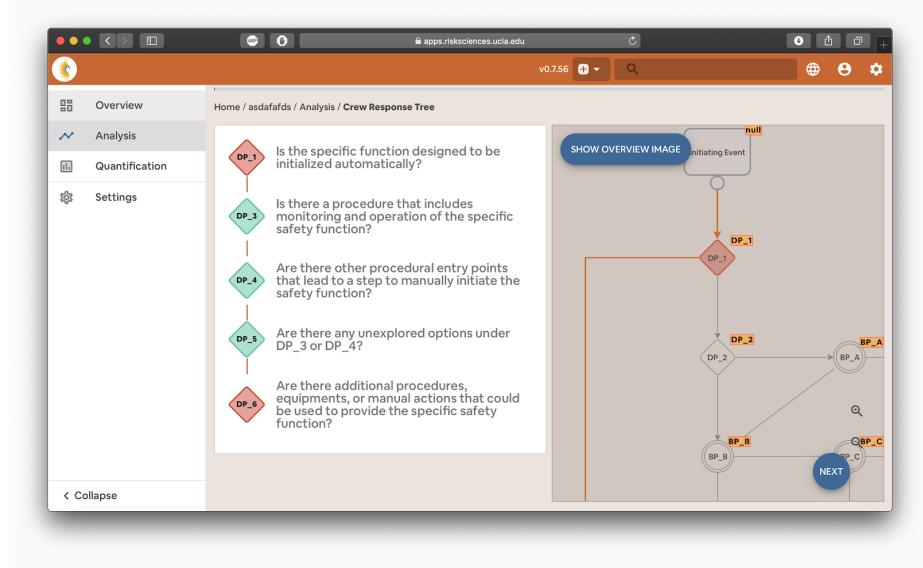
During the summer, I was more confident with my skills in React and started to work on core features of the app such as Fault Tree Modeling using MxGraph.



One of the most challenging features I implemented is node value setting page, where users can input data into a node.



Recently, I am also working on the development of Phoenix, a human reliability analysis web application for Japan's Nuclear Regulation Authority. These two applications look similar because they are both built on top of the same library we are building.



# Contribution

- Develop a system reliability analysis web application for NASA's JPL with React
- Develop a human reliability analysis web application for Japan's Nuclear Regulation Authority with **React**
- Enable probabilistic risk modeling techniques to be applied in the different individual domains of the system from traditional techniques using Excel sheets
- Build user interfaces for event modeling using mxGraph
- Migrate 80% of the code base from **JavaScript** to **TypeScript**

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# teamLab

iOS App Developer Intern, 2018/07 - 2018/09

teamLab aims to create digital arts that blows your mind. Aside from arts, the company also helps its clients build stunning websites and mobile apps.



## Role

I joined teamLab's iOS app development team and was assigned to BicCamera project. BicCamera is one of the largest electronics retail chain in Japan, and we were renewing their app so that it adapts to modern design and has more useful features including product recommendations, searching items by category, barcode scanning, and so on.

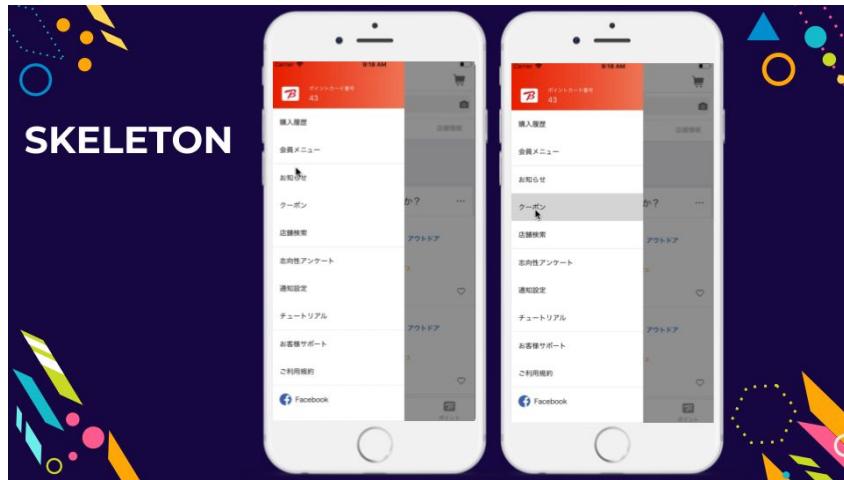
## Process

The first few weeks at teamLab was just me struggling to understand the huge code base and all the tools they use (Slack, Swagger, Zeplin, etc). The first task I completed was tutorial pages. These pages give the new users some ideas about what the app is about and how to navigate it.



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The next thing I worked on was the skeleton views. We show the skeleton items while the app loading the data. This gives the user an idea that the page is not empty, but it's loading something.



I also update some of the UI here and there to make the user experience more pleasant.



## Contribution

- Develop a shopping app for Biccamera, a japanese electronics retailer, in a team of 12 using **Swift**
- Display personalized products based on user preferences and purchase histories
- Rank #23 in App Store for shopping category in Japan
- Implement skeleton views and tutorial pages with **ReSwift** and **RxSwift**

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# Maru Me

iOS App Developer Intern, 2016/06 - 2016/08

MaruMe is a product discovery and review app. It provides a personal space for all the information you need to make informed purchase decisions.



## Role

I joined MaruMe as an iOS app developer intern when I was in community college. It was a startup company, so I worked directly with the two co-founders, where I got involved in everything from design to programming.

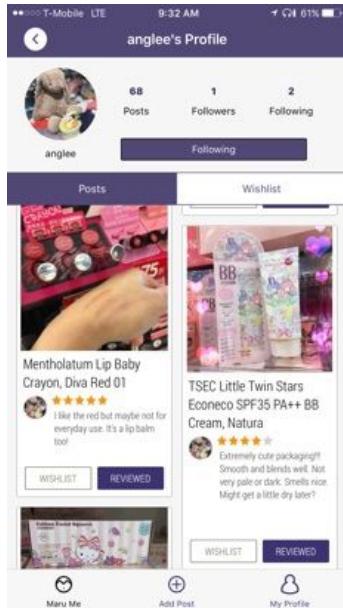
## Process

I had no experience in iOS development when I joined MaruMe. At first, I was just watching Swift tutorials on Udemy. But after a couple weeks, I was already adding new features for the app. I started off by tweaking some existing features such as changing the design/appearance of buttons.



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The largest feature I ended up building was the user profile page, which was released in version 0.0.16.



This was a huge update because users can now see their stuff in one place (they used to have to go to setting > posts, or setting > wishlist) and follow other users just like many other SNS.

## Contribution

- Develop a product review app in a team of 2 using Swift
- Update designs of buttons and layouts
- Build user profile page from scratch

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# Museum 3D

2019

Demo:

<https://intro-graphics-master.github.io/term-project-8/>

Source:

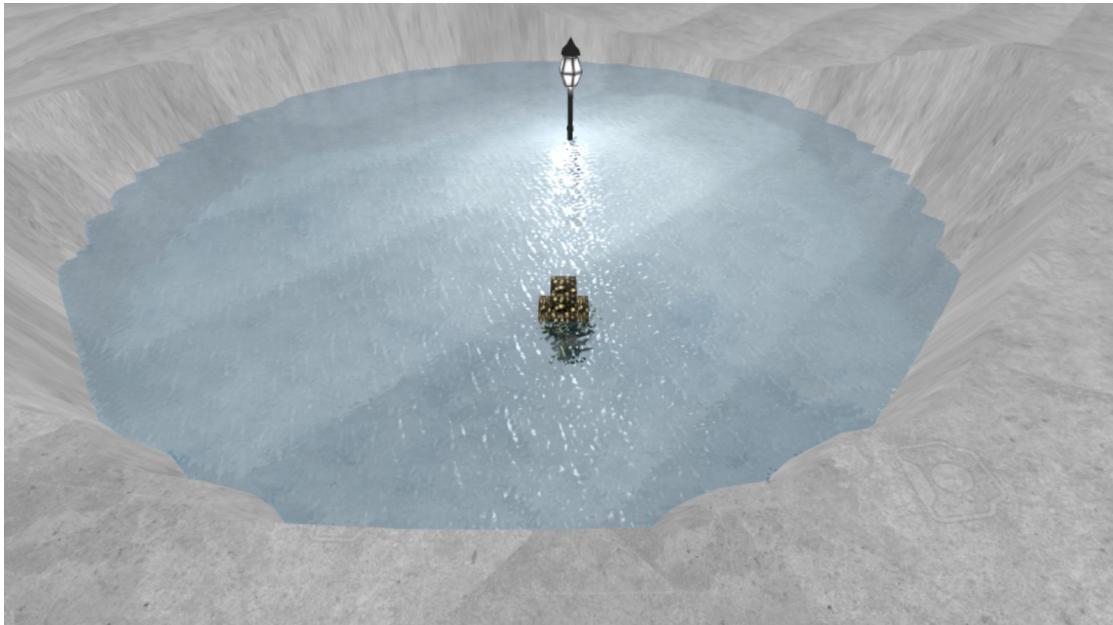
<https://github.com/ioneone/Museum-3D>

This is my group project from CS 174A at UCLA with John Tran and Jonathan Liau. We created a virtual museum with webGL. Inside the museum, there will be something visually pleasing implemented with advanced graphics features.



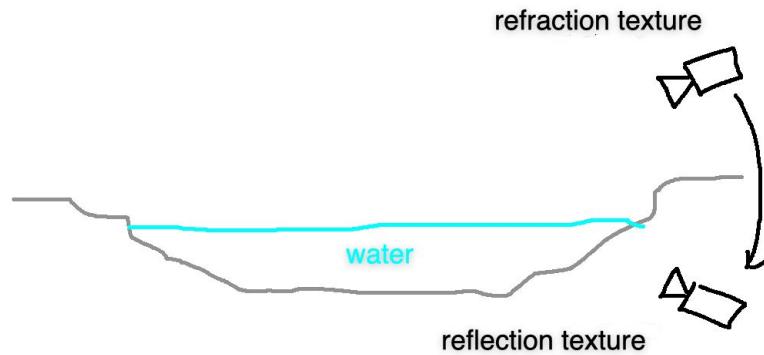
## Process

Our goal was to make a scene where a player is surrounded by many lightbulbs with different colors. We started off with rendering the water in graphics.



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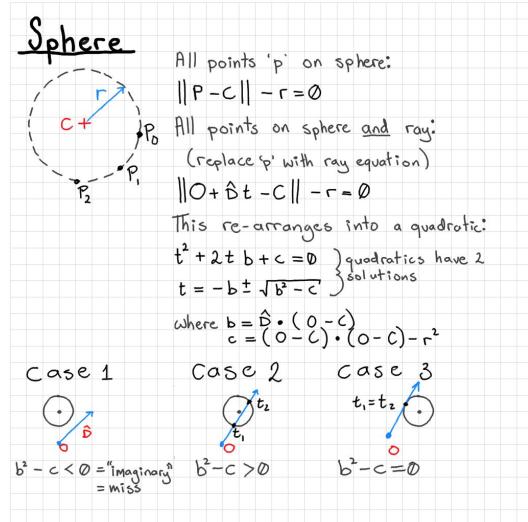
The idea is to render the reflection texture onto the surface, and add some light blue color to make it look like water.



Then we applied the same idea of surface reflection to build a virtual mirror.

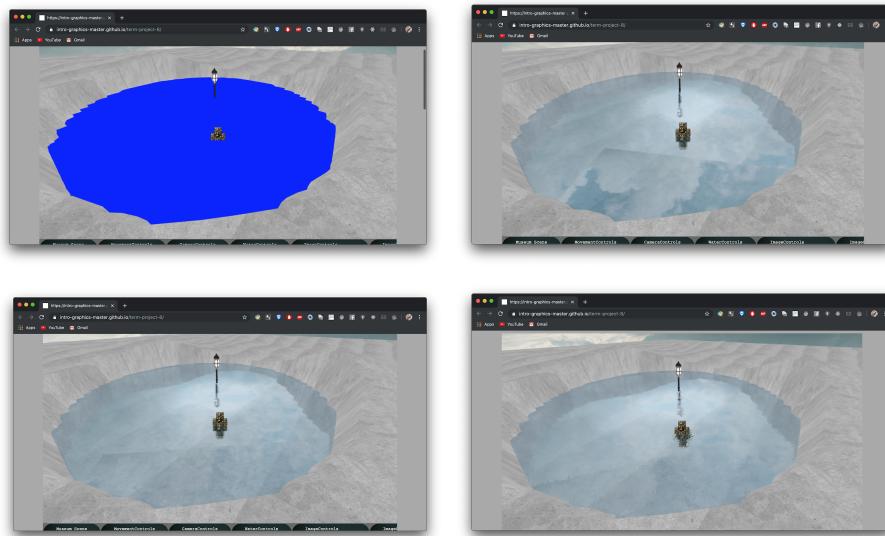


The challenge parts (and fun parts) of this project is that it involves a lot of math. For example, we implemented Mouse Picking (highlighting the object the mouse is pointing to) using a formula for computing intersection

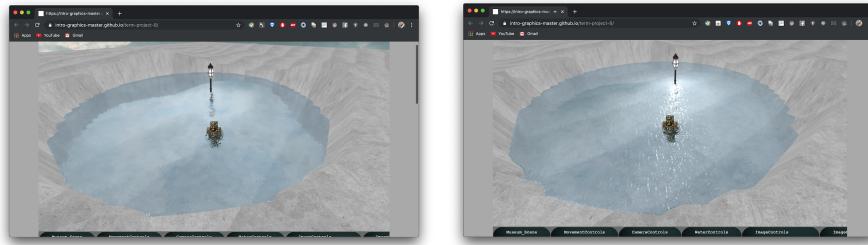


We approximate the lightbulb as a sphere to make the collision detection computation inexpensive.

We presented our demo using a tutorial style presentation, where we showed how we developed the graphical feature step by step.



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The professor ended up really liking it and asked us if he could reference our project in his Web3D 2019 Conference to share the world how to use WebGL in educational settings.

## Result

- Develop a virtual museum with JavaScript and WebGL
- Cited by Professor Ridge at Web3D 2019 Conference as an example of “active textbook”
- Implement advanced graphics features such as SkyBox, Water, and Mouse Picking

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# Glance RMP

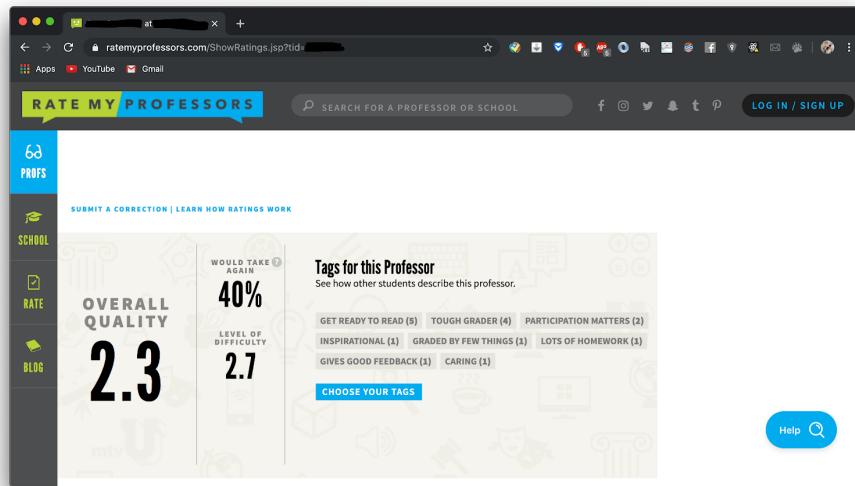
2017



glanceRMP is a Google Extension application that helps Peralta Colleges students choose their classes on Passport. This app fetches the ratings of the professors from RateMyProfessor.com and shows them. Students do not need to copy and paste their professors' names anymore:)

## Process

When I did this project, I just finished learning my first programming language C++, so everything was challenging for me. RateMyProfessors.com didn't provide an API for fetching the data, so I scraped the website and extract data I needed using JavaScript.



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Then, I added some new columns (rating, difficulty, and number of reviews) to the table of course listings and filled them with the data I scraped.

134 Class Section(s) Found						
▼ ENGL 1A - COMPOSITION AND READING						
Room	Instructor	Meeting Dates	Status	Rate	difficulty	numReviews
L-B 265	Brenda Harker	08/21/2017 - 12/15/2017	●	2.3	2.7	58
L-F 202	Brenda Harker	08/21/2017 - 12/15/2017	●	2.3	2.7	58
L-E 202A	Shari Weiss	08/21/2017 - 12/15/2017	●	2.5	4.0	22
L-B 256	Daniel Horan	08/21/2017 - 12/15/2017	●	4.7	2.8	6
L-G 206	John Fielding	08/21/2017 - 12/15/2017	●	3.3	3.2	10
L-E 200 L-HYBRID	Adrienne Oliver Adrienne Oliver	08/21/2017 - 12/15/2017 08/21/2017 - 12/15/2017	●	N/A	N/A	N/A

Although I didn't get a chance to publish this on Google Chrome Extension Store (You need to pay to release an extension to the store), this project served as my first programming project outside the classroom. I learned how to solve a problem without specific instructions and how to Google resources to teach myself coding.

## Result

- Build a Google Chrome Extension app in a team of 2
- Help students choose their courses more effectively
- Automatically search ratings of professors with scraping in **JavaScript**