

RICHARD GUO

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EDUCATION

Carnegie Mellon University

B.S. in Computer Science, Concentration in Systems

August 2018 - May 2022

Pittsburgh, PA

• **GPA:** 3.95 / 4.00, Dean's list

• **Courses:** OOP and Concurrency, Computer Systems, Algorithm Design, Programming Languages, Databases, Parallel Algorithms, Functional Programming, Theoretical CS, Computer Vision, Data Structures, Discrete Math, Linear Algebra, Probability

SKILLS

Languages

Java, JavaScript, TypeScript, HTML5, CSS3, Python, C, C++, Ruby, SQL, Bash, C#, Swift, SML

Frameworks/Libraries

React, Angular, Spring, Bootstrap, Express.js, jQuery, NumPy, Guice, JUnit, Mongoose, Semantic UI

Tools/Environments

Git, Linux, AWS, MongoDB, Node.js, Gradle, Maven, iOS, DynamoDB, Postman

WORK EXPERIENCE

Amazon Web Services (AWS)

June 2020 - August 2020

Software Development Engineer Intern

Seattle, WA

• Designed and implemented a web service backend to monitor pending EC2 instance migrations in the AWS cloud environment. Used **Java**, a proprietary **Guice**-based framework, **DynamoDB**, **JUnit**, and **Guava** cache.

• Created an interactive network graph to visualize current state of migration system and quickly identify bottlenecks. Incorporated filter and search capabilities. Built using **d3.js** and **Spring MVC**.

• Deployed the service and UI to multiple AWS production regions, via a multi-stage pipeline configured with **Ruby**.

Carnegie Mellon Psychology Department (Klahr Lab)

May 2019 - August 2019

Full-time Undergraduate Programmer

Pittsburgh, PA

• Created an interactive drag-and-drop tutorial to teach middle school students about building hypotheses. Used **HTML5 Canvas**, **JavaScript**, and **CreateJS**. Integrated the Hypothesis module with the ISP tutor (**TypeScript**).

• Migrated our background research wiki from Google Site (70+ pages) to custom-stylized pages (**HTML/CSS/JS**).

• Built an account registration/sign-in system using **Firebase** to log user information.

Carnegie Mellon Database Group

May 2019 - August 2019

Part-time Dashboard Developer

Pittsburgh, PA

• Created dashboard to display coverage and performance metrics for novel database system using **Ruby** and a **Sinatra**-based framework. Sourced data from **Jenkins**, **Travis**, **Codecov**, and **GitHub** APIs. Built graphing widgets using **ChartJS**.

MoonRanger

December 2019 - May 2020

Research Assistant

Pittsburgh, PA

• Implemented a path-finding algorithm to be used by an autonomous lunar rover. Will launch to the moon in 2022. (**C++** and **ROS**)

PROJECTS

TartanHacks Registration System

November 2018 - Present

• Led a team to build the **MongoDB/Express/AngularJS/Node.js** registration system for TartanHacks (400+ participants). Customized to yearly themes, integrated with Google Drive, and added form authentication.

• Migrated the registration system from AngularJS to **React/Redux** and **TypeScript**.

CMU Print App

June 2020

• Created an iOS app using **Swift** to print to the Carnegie Mellon printing network. Will soon be deployed to iOS app store.

LEADERSHIP

ScottyLabs Club

August 2018 - Present

Director of Technology (2019-2020)

Pittsburgh, PA

• Led and mentored 5-7 tech projects, including the registration system for TartanHacks, the TartanHacks mentor queue, ResumeDrop+, our **Node.js/Flask** based dining and printing APIs, the ScottyLabs/TartanHacks websites, and our **iOS** printing app.

• Grew the weekly hack sessions from 3 members to 15-20 members.

AWARDS

2nd place at Hack-a-Startup (2019)

USA Computing Olympiad Gold Division Qualifier (2018)

1st place team at National Lockheed Martin CodeQuest (2018)

National Merit Scholar. SAT and PSAT perfect scores (2017)