RICHARD GUO

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EDUCATION

Carnegie Mellon University August 2018 - May 2022
B.S. in Computer Science, Concentration in Computer Systems *Pittsburgh, PA*

- **GPA:** 3.96 / 4.00, Dean's list (all semesters)
- **Courses:** Operating Systems, Database Systems, Computer Systems, Algorithm Design and Analysis, Machine Learning, OOP and Concurrency, PL Theory, Parallel Algorithms, Functional Programming, Theoretical CS, Computer Vision

SKILLS

Languages	C++, Python, Java, JavaScript, C, TypeScript, HTML/CSS, 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

WorldQuant Jun 2021 - Aug 2021
Software Engineering Intern *New York City, NY*

- Transformed an existing single-node data storage system into a distributed multi-node system. Tackled issues involving concurrency and recovery. Deployed code into production. Worked with C++ and Apache Arrow Flight.

Agot.ai Dec 2020 - Jan 2021
Systems Engineer Intern *Pittsburgh, PA*

- Debugged and deployed our team's x86 and ARM Docker containers. Set up CI/CD with Github workflows.
- Developed an interactive React UI for collecting meal data. Deployed with SSL and Amazon RDS Postgres.

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**.
- 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++**)

PROJECTS

CMU Lost and Found web application June 2020 - Present

- Led a team to build a **MongoDB/Express/React/Node.js** Lost and Found website for CMU.
- Worked with University admins to integrate it with the school's lost and found network.

LEADERSHIP

Algorithm Design and Analysis (15-451) January 2021 - Present
Teaching Assistant *Pittsburgh, PA*

- Led weekly recitations, office hours, and grading. Developed material for homework and quizzes.

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, our **Node.js/Flask** based dining and printing APIs, and our **iOS** printing app.
- Grew the weekly hack sessions from 3 members to 15-20 members.