

MAHMUDUL RAPI

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Education

Princeton University

Aug 2020 – Expected May 2024

B.S.E. in Computer Science, Minor in Robotics and Intelligent Systems

Princeton, NJ

- GPA: 3.95/4.0 — *Tau Beta Pi Engineering Honors*
- Coursework: Algorithms & Data Structures, Distributed Systems, Networks, Full Stack Development, System Design, Machine Learning, Programming Systems, Logic Design, Algorithms in Bioinformatics, Algorithmic Game Theory
- Upcoming Coursework: Computer Architecture, Principles of Blockchains, Robotics, ML & Data Science Research

Technical Skills

Languages: Java, Python, C, C++, Golang, HTML, CSS, TypeScript, SQL

Technologies: AWS, React.js, Flask, Bootstrap, Git, Heroku, PostgreSQL, Firebase, GraphQL, Linux

Experience

Amazon Web Services (AWS)

May 2023 – Present

Software Development Engineer Intern

New York, NY

- Worked on the AWS Internet of Things (IoT) Team to develop a real-time data pipeline which streamlines data collection of an automotive embedded system to the AWS Cloud for processing and visualization.
- Developed, unit tested, and deployed C++ device software with AWS Device SDK to publish vehicle statistics to cloud.
- Leveraged a Linux messaging protocol in C to pass data between multiple cores with low latency and memory overhead.

Borderless

Dec 2022 – Feb 2023

Software Engineer Intern

Louisville, KY (Remote)

- Developed React.js dashboard allowing clients to view aggregate financial transactions and business metrics over any date range, which attracted new business partners and contributed to startup's first \$1M month of money transfers.
- Designed new GraphQL DB schemas and TypeScript query functions for accounting payments related data.
- Optimized queries for financial data using asynchronous JavaScript to decrease latency by over 30%.

Princeton University Intelligent Performance Lab

Jan 2022 – Dec 2022

Software Developer Research Assistant

Princeton, NJ

- Deployed web version of a Unity motor-learning experiment, tripling number of studies ran in Princeton's IPA Lab.
- Developed a C# backend with REST API integration to store and fetch experimental data from Google Firebase.
- Automated the uploading of experiment setup data from CSV files into the Firebase DB using Firebase JavaScript API.

L3Harris Technologies

May 2022 – Aug 2022

Software Engineer Intern

Clifton, NJ

- Performed unit testing of VHDL firmware code to increase code coverage from 25% to 95%.
- Conducted static code analysis on C++ software for Electronic Warfare system to improve code style and bug finding.

Princeton University Computer Science Department

Sep 2021 – Present

Undergraduate Course Assistant

Princeton, NJ

- Graded 200+ students' programming assignments for Algorithms & Data Structures and Systems Programming course.
- Teaching Assistant for System Design, and Networks course for assistance with concepts and programming assignments.

Projects

TigerClimb | *Python (Flask), JavaScript (jQuery), HTML, CSS, PostgreSQL*

Worked in a team of four to develop a Flask web app allowing 300+ Princeton students involved with the Outdoor Action Climbing Wall to create climbing routes, using our jQuery GUI to drag-and-drop climbing holds.

Implemented feature for users to comment on climbing routes pages, and save list of their favorite routes.

YouTube Timestamp Plugin | *JavaScript, HTML*

Developed a Chrome extension using the Chrome Storage API to allow users to save timestamps of a YouTube video as they view it, and return back to video at the saved timestamps.

Python Trading Bot | *Python, Pandas, Numpy*

Programmed a trading bot which automates real trades using the Robinhood API, and leverages data analytic libraries to employ a buy-low sell-high strategy.

HTTP Proxy | *Golang, Python*

Developed a web proxy that passes requests and data from local web clients to remote web servers for improved web performance by leveraging DNS prefetching, data caching, and content filtering specified HTML elements such as ads.