

# Mahmudul Rapi

mrapi@princeton.edu

(347) 679-5659

Portfolio: [mahmudulrapi.netlify.app](https://mahmudulrapi.netlify.app)

## Education

**Princeton University**, Princeton, NJ

09/2020 – Present

B.S.E. in Computer Science, Expected Graduation Date: May 2024

GPA: 3.95/4.00

Minor: Statistics & Machine Learning

Coursework: Full Stack Programming Techniques, Algorithms & Data Structures, Systems Programming, Machine Learning, Java Programming, Digital Logic Design, Discrete Mathematics, Linear Algebra

## Experience

**L3Harris Technologies** – Incoming Software Engineering Intern

Starting 06/2022

**Princeton University Psychology Department** – Software Research Assistant

01/2022 – Present

- Working in the Princeton Adaptation and Intelligence Lab, integrating Unity and C# systems through Google Firebase in order to deploy a web app which is user-friendly for psychology study subjects.

**Princeton University Computer Science Department** – Course Grader

09/2021 – Present

- Graded over 200 students' programming assignments for the *Algorithms & Data Structures* course at Princeton and provided personalized feedback.
- Helped debug students' Java code for correctness, efficiency, and style.

**Centers for Disease Control & Prevention** – Data and Program Evaluation Intern

06/2021 – 08/2021

- Used R programming and Microsoft Excel to generate visual data from CDC's Career Program Selection Reports and develop new recommendations on current selection measures.
- Worked on a content inventory to catalog and organize over 150 directories on CDC's Science Office SharePoint storage system to improve accessibility for internal users.

## Activities

**The Daily Princetonian (School Newspaper)** – Software Engineer

01/2022 – Present

- Working on the frontend design (HTML, CSS, Javascript) for various pages on the Daily Princetonian online website which are seen and used by hundreds of students on campus.

**Princeton High Powered Rocketry** – Software Subteam Lead

09/2020 – Present

- Teaching the software team of 15 people how to use Python to program a Raspberry Pi microcomputer, and C for programming an Arduino microcontroller, used for implementing sensors on our rocket.
- Created the team's first dashboard using Arduino IoT Cloud for tracking sensor measurements.

## Projects

**My Portfolio Website** (HTML, CSS, Javascript): Created a personal website which contains information about me, my resume, projects, socials, and contact information. Deployed at <https://mahmudulrapi.netlify.app/>

**Princeton University Computer (PUnC)** (Verilog): Programmed a 16-bit processor that implements the LC3 instruction set. This processor is Turing complete and is a full-fledged stored program computer.

**Digit Classifier** (Python, Numpy): Implemented a 0 to 9 digit classifier using a machine learning model trained on about 1800 images which runs gradient descent to classify pictures of digits with 80% accuracy.

**Seam Carving** (Java): Implemented seam carving which is a content-aware image resizing technique where the image is reduced in size by one pixel of height (or width) at a time while preserving content.

**Power Electronics Library** (Java): Created a power electronics library programmed in Java containing various power electronic topologies (diode-rectifier, buck converter, boost converter, flyback converter). User-interactive for circuit parameters, and computes the output current and voltage along with other design considerations.

## Programming Languages

Languages/Skills: Java, C, Python, HTML, CSS, Javascript, SQL, R, Verilog, Git/Github, Microsoft Excel