Raiyan Mahbub

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Education

University of Minnesota, College of Science and Engineering Minneapolis, Minnesota
Bachelor of Science in Computer Engineering December 2021

- Cumulative GPA: 3.38
- Honors: Roger & Mary Haxby Scholar, Chauncey L. Greene Scholarship, Prakash Family Scholarship
- Relevant Coursework: Algorithms & Data Structures; Computer Architecture/Machine Organization; Analog Electronics; Software Engineering I; Microcontrollers; Artificial Intelligence I; Circuits and Electronics Laboratory

Experience

Software Engineering Intern, MTS Systems Corporation (May 2020 - Current)

- Worked with the RPC Team during the major development of the RPC Connect application.
- Wrote automation scripts with C# and Iron Python for benchmark testing to measure timing performances and relayed these statistical results to marketing team; worked with data from Jaguar Land Rover and General Motors.
- Converted over 1200 icons throughout the Connect application from PNG files to SVGs to resolve scalability and resolution issues with XAML modifications and a third-party bash script.

Lead Software Development Intern, Encephalo Investments (Dec 2019 – Sep 2020)

- Led weekly meetings and managed a small group of interns at startup firm, facilitated development team to ensure the execution of Agile methodologies, and assigned out appropriate tasks from project backlog to maximize efficiency.
- Built an auxiliary for manual portfolio management that uses stochastic methods and the Monte Carlo simulation to judge the future performance of a portfolio through Python; deployed through Flask and outputs a generated PDF.
- Developed and implemented interview and hiring material to source top candidates for software development and financial engineering teams.

Projects

LED Fruit Detector

- Team lead on EE2361 Final Group Project. Interfaced a PIC24FJ64GA002 microcontroller with the Adafruit CAP1188 and 8x8 RGB LED matrix to create a fruit detector and compiled a technical report analyzing the code.
- The capacitive sensor relays and tracks changes in the capacitance triggered by touch and release to the microcontroller through I2C communication; outputs the appropriate function to address the 64 LEDs on the matrix to display the appropriate custom fruit animation.

Algorithms and Optimization Techniques for TSP

- Conducted a comparative study to test and evaluate the performance of three algorithms with Python modules that attempt to solve the traveling salesman problem: Simulated Annealing, Ant Colony Optimization, Genetic Algorithm. Research paper was documented through LaTeX.

Personal Website

- Designed and implemented a personal website with JavaScript and HTML bootstrapped with SASS showcasing a variety of software and hardware projects as well as detailing past work experience and technical skills.

Correlation Tracker Tool

- Created a simple equity returns correlation tracker that computes the Pearson correlation coefficient against the returns of a customized portfolio and generates a heatmap built with Python, Seaborn, and Yahoo Finance API.

Skills and Interests

Technical Skills

- Programming Languages: C, Python, Java, Embedded C, HTML/CSS; Familiar with React, C#, XAML, LaTeX
- Development Environments: Visual Studio, Windows, Mac OS X; Familiar with Linux Ubuntu
- Software: MATLAB, Git, Azure DevOps, MPLAB X IDE, LTspice, Microsoft Office, Mathematica, Xilinx Vivado
- Miscellaneous: Project Management, Web Development, Embedded Systems, Quantitative Finance, Circuit Analysis

Clubs/Groups

- Institute of Electrical and Electronics Engineers (IEEE)
- Association for Computing Machinery (ACM)

Volunteer Work/Community Service

- Gift Gallery Associate at Saint Cloud Hospital
- Elementary Summer School TA at Oak Hill and Westwood School