Tamim Rahman

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Education

Computer Engineering (B. Eng)   Sep 2019 - May 2023 [Expected]
Specialization in Software Engineering
Ryerson University
GPA: 3.93 / 4.33

Work Experience

Software Developer Intern Toronto, ON   Sep 2020 - Present
Cybersecurity Research Lab (CRL)
- Developed a prototype web application using **Javascript** frameworks such as **Sails, Vue, React and Express** to show investors the potential of the CRL blockchain network in preventing fraud in the real estate industry and beyond.

Research Assistant - Cryptography Toronto, ON   May 2020 - Aug 2020
Ryerson University - Department of Computer Science
- Created an implementation of SIKE (post-quantum cryptography) for AVR microcontrollers using **Rust** and the relevant concepts of abstract algebra to decrease the time needed for cryptographic key-exchanges.
- Developed a **Rust multi-precision arithmetic library** which allowed developers to store, perform basic arithmetic, and modular reduction on 400+ bit numbers on 8-bit architecture with significantly lower overhead.
- Built **Python** scripts to verify the functionality of the multi-precision library against 100,000+ tests cases.

Technical Projects

Public Knowledge - CRUD Web Application   *Github* | Aug 2020
Built a wiki using **Django** to mimic the basic functionality of Wikipedia. The **Python** web app allows authenticated users to create, update, and delete pages on the wiki and collaborate with fellow peers on articles.

Package Delivery Detection System   *Github* | May 2020
Developed a **Python** application that implements OpenCV and the Google Vision API to detect when a delivery has been made to a household and notifies the user via email, providing an affordable smart door monitoring system.

Extracurricular Experience/Projects

Lead Developer (Executive) Toronto, ON   Sep 2020 - Present
Ryerson Electrical/Computer Engineering Student Society
- Developed a custom discord bot using **Python** to authenticate and automate user roles/permissions for 800+ users on the student union's official discord server for online events/enrichment.
- Created a notification system using **Python** to notify students about events/workshops based on their interests.

Controls Developer Toronto, ON   Sep 2019 - Present
Ryerson Rams Robotics (R3)
- Developed a **Python** heat map to visualize radiation data for the Mars rover, resulting in a significant decrease in decision making time for operators in the Canadian International Rover Competition.
- Created an app using **Python** and **SQLite** to simulate incoming radiation data coming from the rover's sensors leading to more robust testing of the controls systems and an expected decrease in AI development and training time.

Avionics Developer Toronto, ON   Sep 2019 - May 2020
Ryerson Rocketry Club (RRC)
- Developed the communication and encryption software for the ground station and the rocket using **C/C++** on **Arduino** to relay the status of the rocket's sensors. Allowing for secure and reliable communication during Mach >2 flight.

Skills

Proficient: Python, Java, C/C++, Javascript, Rust, Git, MongoDB and SQLite.