Rakeeb Hossain

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Experience

TwentyBN   June 2019 – September 2019
Data Science & iOS Engineer Intern   Toronto, ON

- Developed iOS Millie, an AI-powered fitness trainer, planning new architecture and **porting the project's entire codebase to Swift**
- **Lowered socket latency by over 3x** by optimizing predictions for animations
- Converted ML models from Keras to Core ML for compatability in iOS
- Developed Swift API to enable using Numpy natively, minimizing future code rewrites to Swift by allowing Numpy operations to run directly
- Presented the iOS prototype to **M12, Microsoft's Venture board**
- Tools: Swift, Python, WebSockets, PyTorch, Objective-C, Unity3D

Trace R&D Center – U of Maryland   May 2018 – June 2019
Software Developer   Remote

- Developed an open-source version of the Photosensitive Epilepsy Analysis Tool (PEAT) to solve an open challenge by the GPII Developer Space
- Developed an algorithm using summed-area tables and 1D DFTs that is **30% more efficient than the Harding Test** on standard-sized videos
- Worked with Dr. Gregg Vanderheiden to port my algorithm into the tool
- Modernized interface and migrated codebase from MFC framework to Qt
- Tools: C++, OpenCV, Qt

SickKids Hospital – Medimo Labs   June 2018 – August 2018
Software Engineering Intern   Toronto, ON

- Developed the Medimo iOS app and web interface for Dr. Ian Chen
- Developed a digital check-up feature and a chat feature using MessageKit
- Tools: Swift, HTML5, CSS3, Javascript, Node.js

Projects

myCryptoHippo

1st Prize, SAGE Nationals; 3rd Prize, SAGE World Cup; Innovation of the Year, Junior Achievement Canada

- A cryptocurrency market simulator web application
- Reached a peak of **1100 active users** in May 2018
- Tools: HTML5, CSS3, Javascript, jQuery, PHP, SQL

AudioHelpers-CoreML

- A toolkit of classes that simplify working with audio in Core ML
- Includes waveform processing, audio collection & buffer management
- Tools: Swift, Core Audio

Billboard-Metadata-API

Created for Interscope Records

- A Python API that allow for easy fetching of metadata and charts of Billboard albums, songs, and artists.
- Tools: Python, Requests, BeautifulSoup.

TransplantChain

1st Prize, nobulHACK

- A blockchain solution built on the Ethereum network to streamline organ transplantation with smart contracts.
- Tools: Javascript, Node.js, Solidity, Web3.js

Skills

Native Speaker:
C++, Python, Swift, HTML5, CSS3, Bash, Vim

Conversationally Fluent:
JavaScript (ES6), ReactJS, Node.js, PHP, SQL, Coq, Git

Curious Tourist:
AWS, PyTorch, Keras, CUDA, MongoDB, Docker

Awards

Leadership in Technology
Junior Achievement
Canada 2019

1st Place
SAGE Cup Nationals 2018;
3rd at World Cup

1st Place
NobulHacks: TransplantChain

1st Place
Ryerson Sandbox 2019

Education

University of Waterloo
B.Sc Computer Science
Expected grad: April 2024

Intended specialization:
Combinatorics
and Optimization

Cum. GPA: 4.0

MIT Launch 2018
Project: Notitia

SHAD 2017
McMaster University

Fun stuff

Favourite Algorithm:
Floyd-Warshall algorithm

Favourite Website:
codeforces.com