Rafsan C

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Education

University at Buffalo, State University of New York *Class of 2020*

Bachelor's Degree in Computer Science, Minor in Mathematics

- **Selected Coursework:** Machine Learning, Data Mining, Web Development, Microprocessors, Data Structures and Algorithms, Linear Algebra, Differential Equations, Systems Programming.

Experience

PocketCare+ (contact tracing app for 30,000+ students and faculty members) *May 2020 – Present*

Software Engineer Intern (iOS)

- Developed the iOS beacon library for close encounter detection and integrated Bluetooth advertising/scanning in the background, with interoperability between Android and iOS, which led to a tenfold increase in overall efficacy and up to 100% increase in real-time social distancing data collected.
- Implemented encounter session and modified hamming code algorithm to increase reliability and detect/correct errors (upto 98.6% during testing) in data bits that occur during transmission.
- Co-authored the **white paper** and made **presentation videos** for NYS Department of Health and university administrators.

Embedded Computing and Science Lab *April 2017 – September 2018*

iOS Engineer

- Developed a mobile app that uses built-in accelerometer and gyroscope data to help stroke patients perform various rehabilitation exercises; up to 90% valid feedback rate during "range of motion" exercises.
- Utilized CoreMotion library to simultaneously extract acceleration data and inform patients of their progress in real-time using AVSpeechSynthesizer framework.

Nanosatellite Laboratory *February 2017 – June 2017*

Web Developer

- Implemented tracking and gyroscope data visualization functionality in Python for GLADOs satellite.
- Wrote backend code to reflect sensor status, refactored legacy code to reduce coupling and improve readability.

Projects

Torble (App Store) — platform for academic services - Stripe • AgoraEngine • Lottie *Shipped December 2019*

- Implemented priority based matchmaking functionality, real-time white boarding and video chat capability.
- Integrated Stripe API in Swift, allowing students to securely make payments and tutors to accept payment with connect express.

Plight — Awarded Best Design - ARKit • MapKit • FirebaseAuth • Google Maps *BrickHack 2017*

- Built AR survival game utilizing ARKit in combination with core location framework to build healing zones in specific places and allow users to defend themselves when other players (nearby) are trying to spread diseases.

WaterX — Awarded Most Innovative Hack - Twilio • Zapier • AlamoFire *Erie Hack 2017*

- iOS application that shows users water quality based on their water supplier, also collects and stores user complaints (submitted via SMS or the app) and infrastructure data to pinpoint potential pipeline failures.

Pubspek — featured on PhoneDog, PhoneArena - Azure Face • IBM Tone Analyzer *Shipped May 2017*

- iOS app that provides feedback to hone public speaking skills by analyzing facial expressions, speech and timing.
- Improved Microsoft's existing Face SDK by extracting and analyzing low quality frames every second to achieve near real-time facial expression recognition.

Skills

- **Languages:** Javascript, Java, Swift/Obj C, Python, C, PHP, SQL.
- **Tools:** Xcode, Brackets, Emacs, Vim, Sketch, Zenhub, Github.
- **APIs & SDKs:** Stripe, Twilio, Firebase/AWS, Azure(Cognitive), IBM Watson, Agora.io.