RAFID MIRZA

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EDUCATION

University of Virginia, School of Engineering and Applied Sciences, Charlottesville, VA   *Expected May 2024*
(BS) Major in Computer Science, Minor in Data Science
- GPA: 3.9/4.0 (Dean's List Fall 2021)
- Relevant course work: Data Structures and Algorithms II, Machine Learning, Probability, Linear Algebra, Advanced Software Development, Intro to Cybersecurity, Foundations of Data Analysis, Communicating with Data, Data Privacy, Computer Architecture,Theory of Computation, Program and Data Representation

TECHNICAL SKILLS

- Languages: Python, C/C++, Java, Javascript, x86 Assembly, HTML/CSS, Bash
- Frameworks and Libraries: Django/Django Rest Framework, React, Selenium, JUnit, Pandas, Scikit-Learn, Natural Language Toolkit, Numpy
- Tools/Technical: Git, Linux/Unix, Networks (TCP/IP), Wireshark, Firebase, Heroku, MySQL, Azure Storage Explorer, CI/CD, Raspberry Pi, Arduino

EXPERIENCE

Undergraduate Research Assistant, **High-Performance Low-Power Lab,** Charlottesville, VA   *September 2022 - December 2022*
- Constructed a Python script leveraging Spidev library to communicate with ADXL accelerometer over Serial Peripheral Interface (SPI) of Raspberry Pi
- Created a Python script to clean and preprocess data in ML/AI pipeline by removing noise and normalizing/calibrating sensor data
- Simulated multiple mock trials of failure versus regular operation and utilized Pandas to display/analyze the data collected

Undergraduate Teaching Assistant, **Dept. of Computer Science - UVa,** Charlottesville, VA   *August 2022 - December 2022*
- Provided guidance and instruction to students of Computer Architecture course in fundamental topics such as: x86 Assembly, caches/cache optimization, bit-fiddling, virtual memory, pipelining processors, and code optimization techniques
- Led office hours and lab section of roughly 50 students to help with programming assignments such as the disassembling and understanding x86 Assembly code and optimization of C code with caches and Intel Intrinsics

Backend Engineer Intern, **SkyIT Services,** Calgary, Alberta   *June 2022 - August 2022*
- Implemented Multi-Factor Authentication System from scratch deploying HOTP and TOTP algorithms to generate MFA tokens, Twilio API and Django Mail to send tokens, and PyOTP to verify tokens
- Designed new REST APIs for generating maintenance requests to reduce amount of queries being made to SQL database reducing overall time to execute by 50%
- Addressed regular production bugs and improvements in existing Django REST Framework APIs using Trello to prioritize requirements with story point Fibonacci method
- Provided code reviews and approved of merging code to an established codebase through Git with two additional engineers
- Tested code as per industry standards using Postman for rapid API testing and documentation
- Discussed changes and progress in bi-weekly sprint meetings with Executive Director and weekly standup with CEO

PROJECTS

DevOps Manager, **Student Studying Management System,** Charlottesville, VA   *February 2022 - May 2022*
- Endeavored within a scrum team to develop solutions to improve matching students with study partners
- Developed a full-stack web application using Django as backend and HTML/CSS/Javascript as frontend with MVC architecture
- Elicited requirements from 20 stakeholders and devised user stories with story points to fulfill acceptance criteria
- Implemented continuous integration and delivery through GitHub Actions and Heroku CI to build the app upon new release
- Managed extensive regression testing through Django Unit Tests

Co-Researcher, **Detection System for Problem Behaviors in Teenagers,** Roanoke, VA   *August 2019 - January 2020*
- Constructed a Python program to distinguish irregular texting behavior in teenagers
- Performed tokenization and word stemming/lemmatization on data leveraging the Natural Language Toolkit (NLTK) library and Pandas to improve accuracy of predictions by 20%
- Utilized Scitkit-learn's Tfidfvectorizer (Term Frequency - Inverse Document Frequency) for feature extraction and applied supervised classification algorithms (Naive Bayes, SVM, and Random Forest) on vectorized data
- Received 1st place award at Roanoke Valley Governor's School Project Forum and Roanoke County Schools Science Fair