Zahin M. Zaman

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PROJECTS

quickVax

HackTheNorth 2020++

- A web application that efficiently matches vaccine receivers with medical institution using patient priority queue system
- Employed backend **Django** server and SQLite3 database using **Django REST framework**
- Developed frontend **React.js** application with **Bootstrap** classes and REST API server communication

EduSource

HackTheU 2020 – Best Use of Google Cloud
Hackrithmitic 2020 – Best Use of Google Cloud

- Web application for enriched remote education, crowdsourcing course materials and scientific equation recognition
- Constructed full-fledged **Flask** application in **Python** with **HTML, CSS** and **Bootstrap**
- Employed **Google Cloud Vision** tool to implement scientific equation recognition from handwriting

pupil

HackDuke 2020 – Wolfram Award

- **OpenCV** application that detects pupil movement and develops eye-tracking communication for Cerebral Palsy patients
- Applied **Haar Cascade classifiers, blob detection** and **morphological transformations** to process images
- Utilized **multi-state sigmoid activation function** to calibrate pupil coordinates

Hachiko's Journal

HackRU 2020 – 1st Place Health Hack

- AI-based digital therapeutic journal writing for mental health patients with interactive virtual assistant
- Performed sentiment analysis using **Google Cloud Language** to provide real-time feedback and compliments
- Developed desktop application with stylish frontend and interactive virtual assistant using **PyQt5**

TECHNICAL SKILLS

Programming: Python, C, C++, HTML, CSS, Javascript, Bash, Perl, SystemVerilog, VHDL, ARM Assembly

Tools & Frameworks: Linux, Windows, Git, Tensorflow, Keras, scikit-learn, OpenCV, PyQt5, Flask, Django, React, GCP

EXPERIENCE

Open-Source Software Developer

codePrentice.

codePrentice | Sept 2020 – Present

- Streamlined **Python** package structure for open-source **multiparty-computation** library MP-SPDZ
- Expanded machine learning computation to support **Tensorflow SqueezeNet, ResNet** and **DenseNet** models
- Implemented image processing operations in **Pillow** and **SciPy**

Software Developer

WIND

Wind River Systems | Sept 2020 – Dec 2020

- Rectified multi-threading and memory-based defects in **C** and inline **Assembly** for VxWorks RTOS and Helix hypervisor source code
- Developed interactive program in **PyQt5** that assists in writing git commit messages, and verifies Jira issue and code review status
- Formulated git hook script to detect and block commits on restricted files and identify file author

Display Verification Engineer

Qualcomm

Qualcomm | Jan 2020 – May 2020

- Engineered **SystemVerilog** assertions and **C++** simulations tests to verify display processor design
- Attained **20%** increase in functional coverages by debugging waveform using Synopsys Verdi tool
- Automated formal verification using **Perl** scripting to extract design hierarchy and formulate assertions
- Web-scraped design database and employed **PyQt5** to build interactive GUI for managing hardware registers

Embedded Software Developer

imagine COMMUNICATIONS

Imagine Communications | May 2019 – August 2019

- Reconstructed source code in **C/C++** on a Linux environment to fix firmware bugs
- Extracted IP routing data from data structures and developed troubleshooting functions and mapping tables
- Utilized **SoapUI** to inspect and track REST API processes

CAN Interfacing Team Member

WATO

WATonomous | Jan 2019 – April 2019

- Developed **Python** code in **ROS** framework for car's lock and turn signals and inertial navigation system driver
- Enhanced low-speed **CAN** interfacing system of the car and performed simulation in Virtual CAN Driver

EDUCATION

University of Waterloo

UNIVERSITY OF WATERLOO

B.A.Sc. in Electrical Engineering, 3A | Sept 2018 – May 2023

- **Term Dean's Honour List,** for outstanding academic performance
- **President's Scholarship of Distinction**