ZAHIN M. ZAMAN

**TECHNICAL SKILLS**

[](https://imaginecommunications.com/)[](https://uwaterloo.ca/)[](https://www.watonomous.ca/)[](https://www.qualcomm.com/)[](https://codeprentice.org/)[](https://www.windriver.com/)[](https://devpost.com/alvii147)[](https://www.linkedin.com/in/zahin-zaman/)[](https://github.com/alvii147)[](mailto:zm2zaman@uwaterloo.ca)

**PROJECTS**

**EduSource**

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

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

*Python, Flask, Bootstrap, Google Cloud Vision*

* 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

**Hachiko's Journal**

***HackRU 2020 – 1st Place Health Hack***

*Python, PyQt5, Google Cloud Language*

* 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**

**pupil**

***HackDuke 2020 – Wolfram Award***

*Python, OpenCV, PyQt5*

* **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

**Goodwill Studio**

***sunhacks 2020 – Best Use of Google Cloud***

*Python, PyQt5, Google Cloud Speech*

* Profanity-filtering application to effectively combat Tourette Syndrome and Coprolalia
* Employed **Google Cloud Speech** to transcribe audio and censored profane language using natural language processing
* Incorporated **multi-threading** in **PyQt5** to develop interactive GUI with voice recording capabilities

**Software Developer**

*Wind River Systems | Sept 2020 – Dec 2020*

* Rectified multi-threading and memory-based defects for **VxWorks** RTOS and **Helix Virtualization Platform**
* Debugged and reconfigured source code in **C** and utilized inline **Assembly** to write thread-safe functions
* 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

**EDUCATION**

**University of Waterloo**

*B.A.Sc. in Electrical Engineering, 2B | Sept 2018 – May 2023*

* **Term Dean’s Honour List,** for outstanding academic performance
* **President’s Scholarship of Distinction,** for 95%+ admission average

**Display Verification Engineer**

*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 | 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**

*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**

**Open-Source Software Developer**

*codePrentice | Sept 2020 – Present*

* Streamlined **Python** code structure for open-source **multiparty-computation** library **MP-SPDZ**
* Expanded machine learning computation to support **Tensorflow SqueezeNet** and **ResNet** models

**EXPERIENCE**

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

**Tools & Frameworks:** Linux, Windows, Git, Tensorflow, Keras, scikit-learn, OpenCV, PyQt5, Flask, Django, Google Cloud Developer Tools

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