Tauheed A Elahee

Phone Number: +1 613-857-5767   Address: Ottawa, ON   Email: contact-me@tauheed-elahee.com
Website: `https://tauheed-elahee.com`

Technical Skills

- **Languages**: Verilog, Bash, C, C++, Rust, Java, JavaScript, HTML, CSS, Qt/QML, LaTeX
- **Software**: MATLAB, SPICE, EDA, Microsoft Office, VBA, git, Linux
- **Hardware**: FPGA, microcontrollers, microprocessors

Education

Bachelor of Electrical Engineering, Co-op Option | Carleton University   2024 | GPA: 3.75

Work Experience

FPGA Design Engineer | Mavenir | Kanata, ON   June 2022 - February 2023

- Developed Verilog modules for a debug interface over HDMI by wiring the pins of the HDMI to act as a SPI bus
- Documented procedures including setting up printers to flashing and partitioning Linux on FPGAs
- Conducted testing with signal generators, signal analyzers to test RF performance of Radio prototypes to determine if units meet specification which were later automated using Python, Tcl, and Bash scripts
- Used DU emulators to test 5G and LTE traffic load capabilities of radio units
- Wrote reports on the results of tests and proposed improvements to be implemented to attain desired results and lead meetings over multiple time zones to discuss progress and results

Test Automation Developer Co-op | Sanmina | Kanata, ON   May 2021 - August 2021

- Wrote Excel macros using VBA to analyze test data in order to detect failed units along with which parameters they failed and identified a list of possible failure points
- Created a GUI front end to facilitate user interaction with the Microsoft Excel VBA application
- Iteratively build the analysis tool based on user feedback to ensure proper analysis was accomplished

FPGA Developer Co-op | Ross Video | Nepean, ON   January 2020 - August 2020

- Designed, created, updated and modified verilog modules in order to implement features such as 12G (4K at 60 FPS) in compliance with ITU specifications on 12G video for Gator, a product under development at the time
- Design, implemented and tested a verilog module that facilitates easier video feed loss detection by implementing an FPGA generated moving image super imposed on the video feed
- Designed and implemented a CPLD to multiplex various SPI busses to ensure that multiple sensors could be accessible while respecting design constraints
- Debugged via simulation and signal tapping, done with Altera Quartus, to find and understand errors in design or implementation and then proposed and implemented fixes
- Created Python script to partially automate verification of pin layout consistancy and bus connections in schematic design capture

Device Driver Developer Co-op | Sanmina | Kanata, ON   September 2019 - December 2019

- Wrote drivers, in C++, to communicate with an RF switcher board
- Wrote C++ libraries using SPI and I2C busses to communicate with sensors and memory modules on board
- Created a Windows executable so that the board can be tested through a command line interface and create a dll for LabView so that testing could be automated
- Conducted and assisted with tests of the board and report on results and then implement any changes
- Set up a git repository with GitLab to have a proper development environment and setup a CI/CD workflow
- Moved the build system to CMAKE to help ensure reproducible builds
- Wrote Python and Bash scripts to automate testing a sensor array with a Raspberry Pi

Web Developer | Social Planning Council of Ottawa | Ottawa, ON   June 2018 - April 2019

- Work with geographic and StatsCan data to create new insights through an interactive tool
- Implement new interactive features and resolve bug reports on the company website
- Read the documentation of various libraries and determining the one best suited for the project