Bilal Dawood

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Education

University of Calgary Calgary, AB

BSc in Electrical Engineering, Minor in Digital Engineering — GPA: 3.64 *Aug. 2019 – May 2024*

Coursework: Computer Network, Computer Organisation, Introduction to Communications Systems and Networks

Experience

Digital Hardware Engineer (intern) May 2022 – Aug 2023

Ericsson Canada Inc *Ottawa, ON*

- Achieved 70% reduction in Thermal verification time by developing a test automation tool using Python.
- Ensured accuracy by creating comprehensive test cases and comparing recorded metrics with component datasheets.
- Delivered a comprehensive technical presentation to hardware teams, explaining the usage and outputs from the automation tool, resulting in positive feedback and successful tool adoption.
- Conducted board electrical verification, accurately identifying and recording 8 Flash SPI timing parameters using an Oscilloscope.
- Confirmed data transfer compliance by identifying and recording Flash SPI interface timing parameters using Oscilloscope.
- Hands on experience with UART, JTAG, I2C and SPI with Ericsson radio boards.

Android SDK/NDK Full-Stack Developer (Intern) Feb 2023 – Aug 2023

Ericsson Canada Inc. *Ottawa, ON*

- Developed and optimized an Android app using JavaScript, React Native, C++, and C. Managed tasks with Jira and ensured code quality through continuous debugging and peer reviews using Gerrit.
- Boosted backend data management efficiency by 60% by implementing 4 new classes and optimizing log outputs (Reduced unnecessary data logging and cleaned output formatting).
- Reduced page load times by 90% by implementing infinite scrolling, showcasing expertise in software optimization.
- Collected and analyzed 5G performance metrics (throughput, error rate) using Qualcomm Network Testing Device, contributing to app development.

Projects and Courses

Automated Transit Enforcement | *Python, Git, Software Dev, Hardware Dev, OpenCV* Sept 2023 – May 2024

- Developed a comprehensive hardware block diagram for automated enforcement device outline the integration and use of various components.
- Reduced power consumption by 36% and memory utilization by 800% by implementing efficient triggers for sensors (LiDAR, GPS, camera) using a Python script on an RPi running Linux.
- Integrated hardware components with software server, ensuring smooth data transfer and system operation.
- Designed and implemented SQLite database to store violation data and developed a graphical user interface for easy viewing and management of violations.

ENEL 573 - Computer Networks | *Problem Solving, Mathematical Analysis, Team work* Sept 2023 – Dec 2023

- Gained expertise in ensuring reliable communications over a link and managing medium access.
- Learned about packet routing techniques and protocols. Examined Internet and telecommunications packet network architectures.
- Explored transport layer protocols and various application layer services.
- Developed a solid understanding of data and network security principles.

Network Infrastructure Enhancement | *DHCP reservation, QoS, Port Forwarding, Documentation* Oct 2023 – Nov 2023

- Developed a comprehensive home network upgrade solution incorporating advanced features such as VLAN support, Adaptive QoS, and Link Aggregation to enhance security, efficiency, and performance.
- Configured and implemented port forwarding to enable remote desktop access and secure file transfer via SFTP, ensuring seamless connectivity and data security for client devices.
- Managed the setup of a static IP for network devices through DHCP reservation, ensuring consistent device connectivity and simplified network management.

Technical Skills

Languages: VHDL, Java, Python, C/C++, MATLAB, JavaScript, HTML/CSS, Assembly (ARM, MIPS)
Developer Tools: Git, Gerrit, Linux, PuTTy, MS Azure, VS Code, PyCharm, Jira
Design and Simulation: Xilinx Vivado, Intel Quartus Prime, Cadence Allegro, MODELSIM, NI Multisim. SIMULINK
Hardware Tools: Oscilloscope, Spectrum Analyzer, Multimeter, Solder, Power Supplies, STM MCU, Pynq Z2 FPGA, PIC MCU
Libraries: Pandas, NumPy, Matplotlib, Seaborn, Tkinter, Keras, OpenCV, Pillow, Scikit-learn

Awards

Jason Lang Scholarship(2020, 2021, 2023), **Dean's List**(2020, 2021, 2024)