

Bilal Dawood

+1 587-429-7635 | [Website](#) | [LinkedIn](#) | [Github](#) | Calgary, AB

EDUCATION

University of Calgary

BSc in Electrical Engineering, Minor in Digital Engineering — GPA: 3.64

Coursework: Industrial IoT and Data Analytics, Advanced AI and ML, Advanced Software Design and Development

Calgary, AB

Aug. 2019 – May 2024

EXPERIENCE

Digital Hardware Engineer (intern)

May 2022 – Aug 2023

Ericsson Canada Inc

Ottawa, ON

- Achieved 70% reduction in Thermal verification time by developing a software tool using Python.
- Displayed proficiency in tkinter (GUI dev), pandas (data extraction and file processing), Pillow (Image Processing), numpy, Automation, Data Analysis, Excel Reporting
- Presented innovative ideas to supervisor to improve performance and scope of tool.
- Created test cases to verify and fix tool output, showcasing analytical and debugging skills.
- Showcased report writing and presentation skills by preparing user manual and presenting results to management.

Android SDK/NDK Full-Stack Developer (Intern)

Feb 2023 – Aug 2023

Ericsson Canada Inc.

Ottawa, ON

- Joined the development and optimization of an Android app using JavaScript, React Native, C++, and C; managed tasks with Jira; and ensured code quality through continuous debugging processes with Gerrit and peer reviews.
- Boosted backend data management efficiency by 60% via 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 using Qualcomm Network Testing Device, contributing to app development.

Treasurer

Aug 2020 – May 2022

IEEE University of Calgary Student Branch Executive Council

Calgary, AB

- Managed and maintained branch accounts for professional associations.
- Developed financial strategies, ensured suitable funding for events, and advised on activity cost allocation.
- Presented data in a methodical format in front of other executive council members, demonstrating analytical thinking and proactive communication skills.

PROJECTS

Automated Transit Enforcement | Python, Git, Software Dev, Hardware Dev, OpenCV

Sept 2023 – May 2024

- Developed comprehensive hardware block diagrams to 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.
- Achieved 95% license plate recognition accuracy using PaddleOCR and a cloud-based LPR API.
- Optimized YOLOv8 object tracking model through pruning and quantization, achieving 93% mAP vehicle detection.

Real-time Audio Filtering | C, ARM Assembly, STM MCU, Embedded Systems, DSP

Jan 2024 – May 2024

- Designed and implemented embedded real-time audio filter on the STM32F411 using C and ARM Assembly.
- Reduced filter sampling rate by 28% and reduced program size by 13.6% by utilizing optimization algorithms (block processing, loop unrolling) and use of ARM Assembly.
- Implemented and compared various FIR filtering techniques (Circular Buffer, Block Processing).

Deep learning Finger Digit Classifier GUI | Python, Machine Learning, GUI, Data Visualization

Jan 2022 – May 2022

- Developed a finger digits classifier with fastai and a CNN, achieving a significant accuracy boost from 60% to 88%.
- Employed data augmentation techniques to enhance real-time finger count prediction accuracy.
- Utilized Git for version control, maintaining a clean and organized codebase.
- Employed Seaborn and Matplotlib for data visualization, enhancing the presentation of results (in python notebook).

TECHNICAL SKILLS

Languages: Java, Python, C/C++, MATLAB, JavaScript, HTML/CSS, Assembly (ARM, MIPS), Verilog

Frameworks: React, Node.js, Flask, FastAPI, Tensorflow, PyTorch

Developer Tools: Git, Gerrit, Linux, PuTTY, MS Azure, VS Code, PyCharm, Jira

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, fastai

Hobbies: Soccer, Badminton, Kick Boxing, Photography, Table Tennis

AWARDS

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