

# DAIZZAH BOTOY

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## COMPUTER ENGINEER

### PROFESSIONAL SUMMARY

Computer Engineering graduate with 16 months of professional software development experience and strong academic focus on embedded systems and digital design. Skilled in C++, Python, Java, and Verilog/SystemVerilog, with hands-on experience building real-time IoT systems, working with microcontrollers and FPGAs for device control, and debugging multi-language codebases.

### EDUCATION

**Bachelor of Science in Engineering – Computer Engineering**  
**University of Saskatchewan · Saskatoon, SK**

Sept 2019 - Nov 2024

- Graduated with **Great Distinction**
- Awarded **Dean's Honour Roll** (1st to 3rd year)
- Member of **Golden Key Honour Society**, top 15% of program
- Completed capstone project with **real-world client** and **security standards**

### SKILLS

#### Technical Skills

- **Programming Languages:** C, C++, Python, Verilog, SystemVerilog, Java, Kotlin
- **Hardware & Embedded Tools:** ARM Cortex-M, Quartus, ModelSim, Raspberry Pi, PyQt5
- **Protocols & Communication:** MQTT, TCP/IP, gRPC (Basic), UART
- **Verification & Simulation:** SystemVerilog (UVM), Questa SIM, Functional Coverage, Assertions
- **Tools & Platforms:** Git, Linux, VS Code, Docker
- **Concepts:** Real-Time Systems, FSMs, Memory-Mapped I/O, Constrained Random Verification, Digital Logic, System Testing, Unit Testing

#### Transferable Skills

- **Communication:** grew through asking clear, specific questions during my internship, coordinating tasks and updates in group projects, and working with our Capstone client to understand their needs and **deliver the right features**
- **Problem-Solving:** developed throughout university and real-world projects – constantly figuring out how to approach unfamiliar problems by asking the right questions, **breaking things down**, and **comparing solutions** to find what actually worked
- **Collaboration:** built through working with teammates who had different coding styles, communication habits, and work paces. I learned how to stay **flexible**, **keep things moving**, and contribute even when team dynamics were tough

## EXPERIENCE & PROJECTS

### Student Software Developer

May 2022 - Aug 2023

Calian Advanced Technologies · Saskatoon, SK

- Supported back-end **C++** development for a GUI system interfacing with embedded systems in **satellite communication**
- Debugged and maintained code across C++, Python, Java, Kotlin, and TCL systems
- Contributed to back-end communication logic between UI client and satellite-ground systems
- Followed **Agile Scrum** methodology with daily standups, **2-week sprints**, and **retrospectives**
- Collaborated with 7+ developers and used Git for version control and code reviews
- Wrote **unit and system tests** to verify software behavior and catch regressions

### Smart Parking System - Embedded IoT UI Simulation

February 2023

CME 466 – Embedded Systems Project

- Built and demoed a full-duplex IoT parking system using a Raspberry Pi as the edge node
- Implemented real-time sensor simulation, LED indicators, and warning light control via GPIO
- Developed a Python-based UI for remote control and monitoring over MQTT protocol

### Capstone Project – SecureMed Web Platform

Sept 2023 - Mar 2024

University of Saskatchewan · Saskatoon, SK

- Collaborated with 5-person team to develop a secure **Django-based** medical record platform for a **real-world client**, featuring encrypted communication and a custom front-end UI
- Focused on integration between front-end and back-end components, adapting interfaces for accessibility and device compatibility
- Contributed to team planning, sprint timelines, and client feedback cycles

## RELEVANT COURSEWORK

### • CME 331 – Embedded Systems

- Designed real-time microcontroller systems using ARM Cortex-M
- Interfaced with peripherals and wrote firmware in C with memory-mapped I/O

### • CME 431 – Logic Design using FPGAs

- Build digital circuits on FPGA boards using **Verilog**
- Simulated and tested combinational and sequential logic on real hardware

### • CME 466 – Advanced Digital System Design

- Built an end-to-end IoT system using Raspberry Pi, MQTT protocols, and Python. Integrated edge devices, cloud communication, and proposed ML enhancements for future smart city use cases

### • CMPT 435 – Verification of Digital Systems

- Built SystemVerilog test benches using constrained-random verification and **UVM**
- Verified FSMs, datapaths, DUTs in **QuestaSim** with functional and assertion coverage

### • CME 334 – Network Architecture and Protocols

- Studied network infrastructure, transmission technologies, **TCP/IP**, **security protocols**, and **IoT networking**. Applied **hands-on** lab work in **packet analysis** and Python-based **socket programming**

## REFERENCES

Available upon request