SAKSHAM KUMAR

(+1)647-482-0611 | Samt12589@yahoo.com | LinkedIn | Website

Skills

Languages: C (Embedded), Python, Java (OOP/DSA), SystemVerilog, Verilog, MATLAB, Dart.

Libraries & Frameworks: Pandas, Flutter, Selenium, Jenkins, NumPy, Django, HL7, InterSystems IRIS.

Tools & Technologies: Quartus Prime(FPGA), DE10-Lite, PLLs, UART, SPI, I^2C, RS232/RS485, BLE, TCP/IP, ADC/DACs, PWM control, KiCAD, MEMS sensors**,** Git/GitHub, Jira, PowerBI, LTspice, MS SQL Server**,** FTP, Wireshark, SQL, VS Code & Studio, Linux Driver Development for Character Devices.

Education

BACHELORS | JAN – 2020 to MAY – 2024 | Lassonde School of Engineering, York University

- Major: Computer Engineering | Embedded Systems
- GPA: 3.8/4.0 – Graduated: First Class
- B.E.S.T Certificate recipient 2025

Experience

INTEGRATION DEVELOPER | UNIVERSITY HEALTH NETWORK, TORONTO GENERAL | 04/2025 - PRESENT

- Designed and validated Linux-based integration software, improving real-time data routing reliability and reducing interface errors by ~30%.
- Debugged protocol-driven data flows using SQL and scripting, accelerating issue resolution and restoring system operation during live deployments.
- Supported interface go-lives by monitoring message traffic, identifying failures, and coordinating with IT, clinical teams, and external vendors to ensure seamless interoperability across hospital systems under tight deadlines.

PROGRAMMER ASSISTANT, CED | YORK UNIVERSITY | 05/2022 – 05/2024

- Developed and maintained Linux-hosted applications, troubleshooting embedded-style system, networking, and front-end software issues.
- Tested, reviewed, and debugged new services and automation features, supporting iterative development and release validation cycles.
- Automated workflows using Python and Bash, improving data processing efficiency and reducing manual operational effort by ~25%.

R&D ELECTRICAL ENGINEER COOP | ROMET LTD. | 09/2021 - 04/2022

- Designed and prototyped embedded and FPGA-adjacent systems in the R&D lab, creating working proof-of-concept models using C and Python based firmware for manufacturing and test environments.
- Implemented sensor-driven data acquisition in environmental chambers on custom PCBs, performing MATLAB-based Fourier analysis and testing to validate system reliability.
- Debugged embedded software and hardware issues, collaborating with electrical and mechanical teams to support production readiness.

PROJECTS (AVAILABLE ON GITHUB)

- **Embedded Systems :** Designed and tested embedded communication systems across multiple protocols—including UART, SPI, I^2C, RS232/RS485, CAN bus, BLE, Wi-Fi, MQTT—to learn reliable device interoperability; created a wireless ESP32 data logger integrated with Google Sheets for real-time sensor data recording.
- **Crash Detection System using FPGA, (in System Verilog):** Developed a real-time crash detection system on an Intel DE10-Lite FPGA using SystemVerilog. Integrated ultrasonic sensors and accelerometers to compute velocity and collision risk. Implemented UART communication, PLL-based multi-clock domains, and VGA video output for live visualization. Performed hardware debugging and timing-aware design & state machine design directly on FPGA.