RAYAN RIZVI

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EDUCATION

University of Alberta Edmonton, AB
Bachelor of Science in Computer Engineering Sept 2023 – April 2027
Relevant Coursework: Data Structures and Algorithms, OOP, File and Database Management, Operating Systems, Computer Architecture, Electronic Devices, Microprocessors, Circuits I and II, Computer Interfacing

EXPERIENCE

University of Alberta Aerial Robotics Group (UAARG) Edmonton, AB
Software Team Member Sept 2025-present
- Contributed minor fixes and improvements to an open-source Python-based drone navigation library (mavctl) using GitHub
- Worked with code intended for execution on a drone's onboard companion computer (NVIDIA Jetson Orin Nano) and learned the basics of MAVLink-based control and navigation software

University of Alberta RoboMaster (UARM) Edmonton, AB
Control Team Member Sept 2025-Jan 2026
- Utilized STM32Cube software with C/C++ to develop basic firmware for RoboMaster Type-A (STM32) development boards
- Implemented multi-node CAN bus communication using STM32 HAL with interrupt-driven message handling to support reliable, low-latency data exchange across embedded nodes (across multiple development boards)
- Configured CAN and GPIO peripherals and mapped CAN payloads to onboard LED arrays for binary data display

Eigenspace Consulting Ltd. Edmonton, AB
Field Engineering Intern - Surveyor Jun 2024 – Sept 2024 | May 2025 – Sept 2025
- Assisted with staking out lots, offsets curbs and gutters, roads, and manholes using Trimble GPS and GNSS technology.
- Utilized precision measurements and geospatial data from GPS to support large-scale engineering projects.
- Applied problem-solving and analytical skills to ensure accurate site assessments and measurements, reinforcing key principles of engineering design and implementation.
- Developed an understanding of surveying technology, GPS systems, and data-driven decision-making and collection.

PROJECTS

Multi-Stage BJT Audio Amplifier | LTspice, breadboarding, theoretical and experimental circuit analysis November 2025
- Designed and implemented a two-stage BJT amplifier to achieve a mid-band voltage gain and high input impedance
- Validated performance through LTspice simulations and theoretical circuit analysis, followed by physical breadboard prototyping and testing using an oscilloscope and digital multimeter
- Achieved all design specifications, successfully amplifying a generated smaller signal to be heard louder through a speaker

Traffic Signal Simulator | VHDL, embedded systems, digital logic, digital signal processing November 2024
- Designed a Moore finite state machine to control traffic light sequences at a four-way intersection
- Utilized flip-flops, counters and combinational logic for correct state transitions
- Implemented design onto a Zybo-Z7 FPGA using VHSIC Hardware Description Language through Vivado for real world simulation of various traffic sequences and the corresponding system response

SKILLS

Languages: Python, MATLAB, C/C++, Java, Bash
Tools: VS Code, Git, GitHub, Linux, WSL, JUnit, Eclipse IDE, IntelliJ Idea IDE, STM32CubeMX
Databases: SQL (coursework in progress)
Hardware: VHDL, Breadboarding, Microcontrollers/Development Boards (STM32, Arduino), FPGA programming

CERTIFICATIONS

Amazon Junior Software Developer Professional Certificate (In Progress) – Coursera / Amazon
- Currently completed 2 of 7 courses toward a professional credential focused on software engineering fundamentals.
- Career-focused training in full-stack software development, spanning Java backend development, SQL databases, front-end web technologies (HTML, CSS, JavaScript), RESTful APIs, and collaborative development workflows using Git.
- Developing practical experience with object-oriented programming (OOP), data structures & algorithms, JUnit testing, and the software development life cycle (SDLC).

AWARDS

Beaumont RCMP – Outstanding Youth Conduct Award | ESBCHS, Beaumont AB June 2023
Awarded to the graduating student who demonstrates the core values of the RCMP: integrity, honesty, professionalism, compassion, respect, and accountability, exhibiting courage in peer adversity and positively influencing peers.