Daayim Asim

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4th Year Computer Engineering Student - Graduating April 2025

Education

- **Memorial University Of Newfoundland** — St. John's, NL
  Bachelor of Computer Engineering — *May 2020 - June 2025*
  Courses: *Computer Architecture, Digital Systems Design, Microprocessors, Data Structures, Digital Logic, Computer Networking*

Skills Summary

- Languages: Python, C, C++, VHDL, Java, SQL
- Frameworks: NanoPB, FreeRTOS, Embedded Linux, GNU Radio, FastAPI, Django, Flask, Unity
- Tools: Protobuf, Quartus Prime, ModelSim/Questa, Microchip ASF, Gitlab CI/CD, Jira, Qt, Git, GitHub, MySQL

Experience

- **Research Software Engineer Intern** — Ottawa, ON, Canada
  Communications Research Centre (ISED) — *January 2024 - Current*
  - Developing software tools for geospatial visualizations of wireless communication interference and interference analysis **(Python, Matplotlib, PyQt, SEAMCAT)**
  - Implementing antenna propagation algorithms and user interface tools **(Python, JavaFX, Java, mySQL, Matlab)**
  - Developing software tools focusing on providing quantitative analysis and understanding for leveraging interference tolerance for coexistence between satellite and terrestrial telecommunications
- **Ground Station Engineer Intern** — St. John's, NL, Canada
  C-CORE Inc. — *April 2023 - September 2023*
  - Developed file system storage for the CubeSat satellite's MCU, leveraging data structures like ring buffers and queues for onboard FRAM and flash memory to ensure efficient telemetry data storage and retrieval in accordance with MISRA guidelines **(C, FreeRTOS, Hercules TMS470M)**
  - Developed software defined radio communications between ground station and satellite and selective acknowledgment ARQ protocol for Protobuf messages **(NanoPB, Protobufs, GNU Radio, USRP B200, C, Python)**
  - Simulated FPGA for storing delay Doppler map data from satellite **(VHDL, Modelsim, Quartus Prime, Cyclone V)**
  - Developed ground station user interface for Killick-1 CubeSat (Python, Flask, FastAPI, Grafana) and developed a time-series database for satellite telemetry collection (InfluxDB), and a satellite configuration caching database (RedisDB)
- **Embedded Software Engineering Intern** — St. John's, NL, Canada
  eSonar Inc. — *September 2022 - December 2022*
  - Developed wireless communication device firmware using WiFi and Zigbee protocols for sub-sea embedded applications **(C++, Visual Studio, Microchip ASF 4, Atmel ATSAML)**
  - Programmed machine learning interfacing prototype with collected audio data on Google Coral SoM. Worked on configuring SoM Kernel via the Yocto Project **(Python, Matplotlib, TensorFlow, Embedded Linux)**
  - Developed graphical user interfaces for testing and interfacing with wireless and embedded software applications **(Qt)**
  - Made PCB schematic modifications and debugged and tested PCB hardware **(AutoDesk Fusion 360)**
- **Control Systems Engineering Intern** — St. John's, NL, Canada
  Cenovus Energy Inc. — *January 2022 - April 2022*
  - Designed new circuit wiring diagrams via AutoCad software for Offshore ICCS power cabinets (OrCAD)
  - Tested and programmed PLCs for control system communications using Siemen's SIMATIC software
  - Provided research proposal of alternative ICSS Software infrastructure implementations for Pipe-line simulation testing in Offshore Oil and Gas facilities

Projects

(https://github.com/Daayim)

- **Portable sensor (Embedded App):** Developed power management and wireless communication system that reads sensor data and communicates wirelessly via Zigbee and UART **(C, Microchip ASF 3, Atmel ATMega32)**
- **Doctor Dash (Mobile App):** Developed mobile application that allows users to receive medical advice and book appointments with orthodontists, optometrist, etc. (Flutter, Firebase, OpenAI API)
- **MUNRoom (Web App):** Developed micro-service based rental web application for local university students. Worked on the database and user authentication services **(MongoDB, mongoose, ExpressJS, NodeJS, Kubernetes, Docker, Jest)**.
- **The Midnight Labyrinth (Unity Game):** Developed 2D maze exploration / dungeon crawler game with multiple levels, in-game audio, score tracking, character animations, and combat mechanics (C#, Unity Framework, GitHub)

Honors and Awards

- Amazon Robotics Hackathon (2023): Developed path planning algorithm for robots in Fulfillment Center (2nd Place)
- Memorial University of Newfoundland Endowment Fund Scholarship [$2550.00] (2020)
- Bronze Medal in Eastern Newfoundland Science and Technology Fair (2019)
- Received the Professional Institute of the Public Service of Canada Science Award: Best in Science that Contributes to the Quality of Life for Canadians (2019)