Romel Luis Faife Cruz

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EDUCATION

University of Toronto — Toronto, ON

Bachelor of Applied Science in Computer Engineering, Minor in Robotics, Certificate in AI   *Sept. 2021 – April 2025*

- Operating Systems (C): Labs implementing the functionality of a Linux kernel such as file systems, page tables, threads, process management and cache
- Computer Hardware (C): Labs programming an STM32 Nucleo board and using I2C, SPI, GPIO Pins, and USART to interface with EEPROMs, cameras, LEDs, Real-Time Clocks, IR Sensors and motor drivers
- Other Relevant Courses: Machine Learning (Python), Algorithms & Data Structures (Python), Digital Systems (Verilog), Control Systems (MATLAB), Software Communication & Design (C++)

PROJECTS

Hazard Scout: Camera Feed Rover | *C, STM32, USART, Bluetooth, DMA, GPIO*   January 2024 – April 2024

- Designed and developed an autonomous rover tasked with navigating obstacles using a vacuum robot-type algorithm
- Engineered a Bluetooth transmission system to stream real-time camera feed from the rover to remote operators
- Developed custom drivers for the OV7670 camera module and optimized video streaming using lossy and lossless compression techniques, including Run-Length Encoding (RLE)

EasyRoute: Elderly-Friendly Mapping | *C++, Git, GTK, OpenStreetMap, GIS*   January 2023 – April 2023

- Used object-oriented programming principles to build robust data structures to handle complex map data, optimizing data processing and retrieval to reduce map loading times by 2x
- Applied UI/UX principles to design an intuitive and accessible interface utilizing GTK, decreasing the time for a user to execute actions by 24%
- Repeatedly tested and optimized data structures, refactoring code when necessary, to ensure readability

RentSafeTO Website Redesign | *Python, Adobe Illustrator*   January 2022 – April 2022

- Collaborated closely with the RentSafeTO team to lead a comprehensive website overhaul, resulting in a streamlined presentation of critical information and an enhanced user experience
- Garnered valuable feedback from a survey of 102 users, with 92% of respondents agreeing that the redesigned website significantly improved their comprehension of the data presented
- Developed Python algorithms capable of generating concise textual summaries for building data, increasing information clarity and accessibility for stakeholders

SCHOOL INVOLVEMENT

President & Founder   September 2022 – Present

Latin Engineering Students' Association (LESA)   *Toronto, ON*

- Cultivated the largest engineering Latinx student group on campus with 80 active members
- Supervised a team of twelve executive members to organize biweekly engaging events, increasing engagement in the Engineering Community
- Created and maintained a management platform for the club to handle all administrative tasks, doubling the number of events hosted by the club monthly

EXPERIENCE

Engraving Project Lead & Sales Associate   July 2020 – August 2021

The Rice Man   *Niagara Falls, ON*

- Spearheaded the implementation, maintenance, and documentation of a CNC engraving machine, significantly diversifying the in-store custom jewelry offerings
- Demonstrated strong product knowledge and self-management skills to sell merchandise

TECHNICAL SKILLS

Languages: Python, C/C++, Java, ARM Assembly, Verilog, JavaScript, HTML/CSS, MATLAB, Spanish, English
Tools: SSH, Git, GTK, jQuery, NumPy, ModelSim, Micro Magic SUE & MAX, SPICE simulations