Nathaniel Recto

Whitby, ON | (905) 409-3880 | nrecto@torontomu.ca | Linkedin | Github | Portfolio

SUMMARY OF QUALIFICATIONS

- Currently enrolled as a third-year Computer Engineering student at Toronto Metropolitan University.
- Experienced in analog circuit design and simulation, adept at creating multistage amplifiers using **NI Multisim**, with precise component selection using manual calculations and software tools.
- Experienced in **VHDL** and **FPGA** design, utilized in a general-purpose processor with **finite state machines** and a 7-segment display for advanced technical problem-solving.
- Proficient in **C++** and **Arduino IDE**, demonstrated through the LED Temp-Humidity Indicator, combining sensor data with real-time visual feedback on an LCD Module.

TECHNICAL SKILLS

Languages: *HTML/CSS, JavaScript, C/C++, Java, Matlab, Assembly, Python*

Productivity Tools: *MS Office (Excel, Word, PowerPoint), Google Workspace (Docs, Sheets, Slides)*

Developer Tools: *VS Code, Visual Studio, JavaFX, Git, Github*

Hardware: *VHDL, Quartus II, Arduino Uno, NI Multisim*

Core Competencies: *Engineering Algorithms and Data Structures, Object Oriented Eng Analysis and Design*

Platforms: *Windows, Linux (Unix)*

EDUCATION

Bachelor of Engineering (B.Eng.): *Computer Engineering* *Sept 2022 - May 2026*

Toronto Metropolitan University *(formerly Ryerson)*

PROJECTS

LED Temp-Humidity Indicator - *C++, Arduino IDE* ***Github Repository***

- Engineered an **Arduino**-based system to monitor temperature and humidity using a DHT11 sensor, displaying real-time data on a 16x2 LCD screen while using LEDs to signal specific temperature ranges.
- Integrated hardware components including the UNO R3 Controller Board, LCD display, and three LED lights to create a functional prototype.

General-Purpose Processor - *VHDL, Quartus II* ***Github Repository***

- Constructed a simple processor using **Quartus II** software and **VHDL**, incorporating components such as a 4x16 decoder and finite state machine, enhancing technical problem-solving skills.
- Designed and validated processor functions for accuracy in arithmetic and bitwise operations on two 8-bit inputs, displaying results on 7-segment displays.

Multistage Amplifier Design - *NI Multisim* ***Github Repository***

- Developed and simulated a single-supply, multistage, inverting transistor amplifier using **NI Multisim**, applying detailed simulations and manual calculations for precise component selection.
- Refined circuit performance through thorough analysis, optimizing resistance and capacitance values.

Bank Account Application - *Java, JavaFX* ***Github Repository***

- Built an interactive GUI using **JavaFX**, enabling seamless navigation through core banking functionalities like user authentication, transaction management, and real-time balance updates.
- Implemented **state design patterns** and UML diagrams to manage customer membership levels, enhancing scalability and maintainability.

WORK EXPERIENCE

Operations Support - *Enercare, Markham, ON* *May 2024 - Aug 2024*

- Collaborated with cross-functional teams to resolve HVAC contract deficiencies, applying analytical thinking and enhancing communication flow..
- Optimized invoicing processes by managing payments to contractors, reducing processing time by **20%** and ensuring timely compensation.
- Performed administrative tasks and served as a primary contact, improving communication and increasing team productivity by **15%**.