Jude Rosario

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Skills

Technical Skills: AutoCAD, SOLIDWORKS, Microsoft Office, Excel, Arduino, ANSYS, Lathe/Milling, PCB Assembly
Programming Languages: Python, C++, C, Java, JavaScript, SQL, MATLAB, Google Apps Script
Soft-Skills: Problem-solving, Communication, Adaptability, Teamwork, Time Management, Attention to Detail

Education

University of Waterloo | ***Bachelor of Applied Science in Mechatronics Engineering*** **Sept. 2024 – Apr. 2028**
Faculty of Engineering Entrance Scholarhsip, President's Scholarship of Distinction *Waterloo, ON*

Experience

Lafarge Canada Inc. **January 2025 – April 2025**
Operations Support Analyst *Hamilton, ON*

- Designed precise site layouts in **AutoCAD** and engineered 3D office models in **SOLIDWORKS**, applying **mechanical design principles** to support quarry **spatial planning** and **infrastructure** development.
- Used **Propeller 3D drone imaging software** to calculate **stockpile volumes** with **95%** accuracy, directly supporting **production forecasting** and **blast planning** decisions.
- Coded **automated dashboards** and **performance trackers** using **Google Apps Script** and **Excel**, integrating live **SAP data** to analyze **KPIs** and decision-making across quarry operations.
- Conducted **on-site inspections** on flow meter **instruments** to monitor water levels and **environmental compliance**

Spearmint Dental **July 2024 – August 2024**
Sterilization Technician Internship *Edmonton, AB*

- Operated and maintained **automated UV sanitization equipment**, usage of technical systems and sensor devices.
- Ensured precision in maintaining clean and organized workspaces, applying attention to detail in **hygiene protocols**.
- Organized patient files online and physical, ensuring accurate record-keeping and quick retrieval.

Kumon Math and Reading Centre **September 2023 – August 2024**
Teaching Assistant *Edmonton, AB*

- Developed and implemented **problem-solving strategies** for preschool to high school students to assist in mastering mathematical and english concepts, observed **increase in student engagement by 20%** and **grades** by **50%**.
- Collaborated with a **team** and **communicated** with parents to optimize student learning processes.
- Managed and arranged **multiple tasks** in a **fast-paced environment**, such as grading, tutoring and organizing.

Projects

Wifi-Controlled RC Car | *Arduino* **February 2025**

- **Designed** and **assembled** a remote-controlled car integrating **mechanical, electrical**, and **firmware** components for full motion and steering functionality.
- Constructed chassis with **3D-printed parts** and developed front and rear drive systems with a **servo** and **DC motor.**
- Programmed **D1 Mini Pro** in **Arduino** to enable **wireless control** via custom web interface using angle mapping.

Autonomous Color-Sorting Robot | *C++, Robot C* **December 2024**

- Built an autonomous color-sorting robot in **RobotC** with integrated **color, touch, gyro,** and **sound** sensors for precision handling and navigation.
- Programmed **file-based coordinate mapping** in **C++** and motor encoder logic for accurate/repeatable movement.
- Created a sound detection function that triggered robot actions, **reducing manual intervention** by **80%** and increasing sorting efficiency by **25%.**

CAD Machined Keychain | *SOLIDWORKS, Lathe, Milling Machine, Drill Press, 3D Printer* **October 2024**

- Designed a multi-component keychain using **SOLIDWORKS**, including **part modeling**, **dimensional planning**, and detailed **technical drawings** to guide manufacturing.
- Fabricated components using **3D printing** and **machining**, operating a lathe, milling machine, and drill press.
- Performed **hands-on mechanical assembly** and quality fitting, applying precision measurement tools (e.g., calipers).

Math IA Properties of Sound Waves | *Audacity, Arduino* **April 2023**

- Collected and analyzed piano soundwave data using **Arduino** and **Audacity**, integrating **speaker circuits** and **microcontrollers.**
- Coded various custom piano notes to test soundwave behavior, showcasing skills in **Python** and problem solving.
- Performed **frequency, amplitude,** and **waveform analysis** to derive sine wave equations, applying **mathematical modeling** to compare data.