

Gavin Tranquilino

1A Mechatronics Engineering Student

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EXPERIENCE

Intake Mechanism Designer

Nov. 2021 – Jun. 2023

FIRST Robotics Canada

Waterloo, ON

- Collaborated to design an intake mechanism using SolidWorks for large tennis balls, contributing to our qualification for the FIRST Robotics Worlds championship.
- Leveraged CNC machining to craft a wooden prototype, uncovering the opportunity to enhance chain engagement by 10% through optimized linkage placement.
- Enhanced intake reliability and maneuverability through material testing, 3D modelling and 3D printing boosting pickup success from 50% to 80% and optimizing tight-corner performance.

Robotics Design Team Leader

Feb. 2023 – May 2023

Skills Ontario Competition

Etobicoke, ON

- Employed innovative design techniques, utilizing drill batteries and avoiding pre-built kits for electronics housing to reduce 80% of project expenses.
- Leveraged Arduino programming and electrical signal processing to enhance wheel torque through 3-phase motors.

Air and Noise EHS Engineering Co-op

Jun. 2022 – Jul. 2022

GHD

Waterloo, ON

- Cataloged ventilation system updates in the company database, streamlining data accessibility for engineers.
- Transcribed raw vibration data from Kitchener ion light rail train tracks into Excel spreadsheets, facilitating data analysis for modeling, resulting in improved insight into daily vibration patterns.
- Reviewed ESDM reports to track client's hazardous air contaminants, enhancing data accuracy.

Small Business Entrepreneur

Jun. 2019 – Ongoing

Cravin' Vinyls

- Launched a dynamic multi-platform e-commerce retail venture, specializing in sticker decals, and clothing, driving revenue growth through strategic marketing.
- Developed customer service skills by providing support and communication to a diverse clientele.
- Elevated brand visibility through social media marketing, leveraging platforms such as Instagram ([@cravin.vinyls](https://www.instagram.com/cravin.vinyls)), resulting in a 30% increase in online sales and a 20% growth in follower base within 3 months
- Optimized financing, budgeting, and pricing strategies to achieve an 80% sales increase.

PROJECTS

PsychTracker | *Python, Linux, SSH, Arduino, C++, Git, OpenCV, SolidWorks, Tensorflow, MongoDB*

HackTheNorth

- Harnessed soldering techniques to create robust and durable electrical connections.
- Integrated a temperature sensor into the device for skin temperature data collection.
- Led a 3-member team to swiftly complete Psych Tracker within a 36-hour timeframe, ensuring successful hardware and machine learning integration.

Light Switch Bot/Mount | *Python, Flask, 3D Modelling, 3D Printing, Fusion360, Linux, HTTP, TLS*

- Designed a 3D-printed mount with an integrated web application for remote light switch control.
- Implemented a Raspberry Pi web server, enabling remote access to room lights globally.
- Innovatively enhanced safety by designing a physical light switch mount, eliminating high-voltage work.

Benevolens | *Python, Optical Character Recognition, Steganography, Git, GitHub*

- Leveraged steganography and optical character recognition (OCR) to encode and decode hidden messages in images, improving data security and facilitating covert communication.
- Employed Git to effectively collaborate with a team of 5 in developing a command-line interface (CLI) within a 2 week project completion timeframe.

EDUCATION

University of Waterloo

Candidate for BAsC in Mechatronics Engineering

Waterloo, ON

Sep. 2023 – Jun. 2028