Youssef Elhadad

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Education

Undergraduate Studies **Fall 2020 - Present**
Computer Engineering at the University of Toronto (UofT)
High School **Fall 2016 - June 2020**
North Toronto Collegiate Institute (NTCI), Toronto, Canada

Technical Skills

- **Programming/Protocols:** Experience with C++, C, ARM assembly, Python, ROS2, I2C, CAN, PTP, UDP, TCP
- **Applications:** VS Code, Altium Designer, Modelsim, Imovie, Microsoft Word, Excel, and PowerPoint
- **Languages:** Fluent in English and Arabic

Relevant Experience

Control Systems Lead, University of Toronto Formula Racing Team (UTFR) **December 2021 - January 2024**
- Led the control systems division of the driverless vehicle section at UTFR (https://fsaeutoronto.ca/)
- Enabled control of the brake-by-wire and autonomous steering system
- Implemented programs to enable autonomy for a formula SAE car using C++ and ROS2
- Developed firmware using CAN protocol for inter-device communication on the car
- Collaborated on the design of the low-voltage architecture for the driverless system

Team Member, Map Software Course Project**,** UofT **January 2022 - April 2022**
- Developed coding skills through an advanced collaborative C++ project
- Created a map using OpenStreetMap Data

Team Member, Eng. Strategies and Practice II Project, UofT **January 2021 - April 2021**
- Acquired real-life engineering design experience and gained skills relevant to industry standards
- Designed a prototype of a learning toothbrush for children, meeting client requirements

Building Head and Member, Robotics Club, NTCI **September 2018 - June 2020**
- Presented a funding proposal to raise club funds
- Competed in VEX robotics competitions and qualified for the provincial competition
- Demonstrated leadership skills by leading team meetings and events

Work Experience

Software Engineering Intern - Autopilot Embedded Systems, Tesla **January 2024 - August 2024**
- Worked on GPS and IMU integration into the autopilot system
- Implemented alert and event tracking for critical GPS and IMU signals
- Dropped power consumption for autopilot in suspended state by 30%
- Developed communication interfaces for modules interacting with the autopilot board
- Worked on time synchronization across devices
- Conducted intensive in-vehicle testing to validate changes

Jr. Robotics Software Engineering Intern, Zebra Technologies **May 2023 - January 2024**
- Improved task planning for warehouse automation robots
- Benchmarked different algorithms based on performance cost
- Collaborated on developing an autonomous drone with other interns to enhance warehouse operations

Systems Analyst Co-op, Machine Data Systems **May 2022 - September 2022**
- Applied software development practices and agile methodologies
- Contributed to full-stack development of an application using C#
- Utilized tools such as Azure DevOps, and Micro Focus' Application Lifecycle Management (ALM)