TERRENCE ZHANG

terrencezhang18@gmail.com

+1 (613) 890-8618

Toronto, ON

EDUCATION

University of Toronto — Sept 2021 → Present

BASc Engineering Science - Robotics — 3.62 GPA

Courses

Digital Systems, Microprocessors, Data Structures, Deep Learning, Scientific Computing, Control Systems, Dynamics

Projects

Peashooter Robot — 2024

- Designed a robot "Peashooter" based off the game Plants vs. Zombies
- Programmed an ESP32 microcontroller in C, implemented state machine, PID control
- Trained a computer vision model to identify zombies

Turtlebot SLAM — 2023

- Implemented bang-bang, PID, Bayesian localization, and SLAM control algorithms using ROS/Python to make a robot follow a line
- Program delivered 2nd fastest lap on a circuit with equal machinery

Power Supply — 2023

- Designed current sense amplifier and low-pass filters, and verified the designs in LTSpice
- Created a milled PCB based on simulated circuit design in Eagle, and soldered PCB
- Validated output voltage level and noise using oscilloscopef
- Program STM32 firmware for power supply operation

Skills

- Python, C/C++, Assembly, System Verilog, ModelSim, LTSpice, Eagle, Cadence, Git, MATLAB, Simulink
- PowerPoint, MS Office Suite, CAD, PrusaSlicer, Figma
- Proficient in English, French

Experience

Graphics Hardware Validation Intern

Intel Corporation — Toronto, ON — May '24 → Present

- Developing scripts and tools in Python to automate and execute post-si validation cycles
- Building and maintaining an internal tool to set and build binaries for Intel firmware
- Failure analysis and debug of memory subsystem failures at firmware and hardware level
- Designing and executing test plans to ensure system functionality

Flight Operations Lead

UofT Aerospace Team — Toronto, ON — Sept '22 → Present

- Led system validation for drone systems, developing test plans to ensure functionality
- Developed custom flight stack software to enable high-level control and autonomous operations of drones in ROS using Python and C++
- Created a test rig for tuning PID in 1 axis, ensuring safe control loop tuning
- Failure analysis and triage of power delivery, controllers, and RF systems
- Ensure compliance with competition regulations and aviation regulations

Business Tech Analyst Intern

Deloitte — Toronto, ON — May → Aug '22 & '23

- Mapped a regional airlines' technology landscape and analyzed Azure C# applications for security risks and inefficiencies in compute
- Integrated and modernized the cloud-native C# functions and applications of a grocer to reduce compute and enable the generation of insights
- Led research and strategy for cloud-based sustainability offerings with strategic partners to enable decarbonization
- Created and presented PowerPoints

Student Researcher (Part Time)

PAIR Lab @ UofT — Toronto, ON — May → Aug '22

- Studied the use of Bayesian linear regression to digitally determine control barrier functions for safety critical systems
- Developed a simulation in Python