Terry Tao

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Objective

Looking to continue my career by applying experience from Ford, MRacing and personal projects. Seeking to further develop my practical knowledge with strong technical mentorship at an autonomy, controls, or AI focused internship opportunity during spring-summer 2024.

Experience

Ford Motor Company | Allen Park, MI

ADAS L3 Self Driving Summer Intern — May 2023 – August 2023

- Developed a kinematics based model to flag longitudinal Duty of Care (safety envelope) violation events during L3 test drives
- Automated testing of ECU interface, successfully debugged at least 3 issues related to CAN message packing, transmitting, gatewaying and receiving
- Automated data acquisition on L3 mule F150 with MATLAB scripts
- Learned about how large companies manage project timelines

Education

University of Michigan | Ann Arbor, MI

B.S. Robotics Engineering — Aug 2022 – April 2025

EECS 203 | Discrete Math	MATH 216 | Differential Equations
EECS 280 | Data Structures	ROB 101 | Computational Linear Algebra
ROB 498 | Self Driving Cars	ROB 330 | Localization, Mapping and Navigation
ME 240 | Dynamics & Vibrations	ROB 204 | Human-Robot Systems

Projects and Activities

(See Portfolio)

(See YouTube)

Formula Electric Racing (MRacing) | Autonomous System Director — Sept 2022 - Present

- Project manager for 2024 autonomous system: brakes, steering, safety electronics, controls
- Coordinated with other subteams to ensure consistent or improved levels of functionality and serviceability, while meeting design requirements specified by rules
- Developed and tuned SLAM software stack with a ROS architecture
- Trained a custom YOLO object model for traffic cone detection and perspective mapping
- Managed sponsorships from autonomy focused companies for hardware components

FIRST Robotics (FTC) | Club President — 2018-2022

- Ranked top 40 internationally at Maryland Tech Invitational
- Programmed a triple dead-wheel odometry localizer to perform tasks fully autonomously and optimized velocity trajectories to achieve a top 40 individual score
- Iteratively Designed mechanisms in CAD to manipulate small plastic objects efficiently (grippers, conveyors, linear slides, drivetrain, etc.)

Stewart Platform — 2021

- Designed a 6-DOF parallel manipulator for a regional ISEF research project
- Developed embedded kinematics and dynamics control model on microcontroller
- Implemented IMU acceleration dampening on end effector platform

Other — 2019-2021

- Designed and built a custom dual-nozzle 3D printer to print dissolvable support material
- Developed silicone tether-less pneumatic artificial muscles for a regional ISEF competition

Skills

Programming:
Java | Python | C++ | OpenCV | ROS | Julia | Git | MATLAB | Pytorch | R | Simulink
Software:
Solidworks | Siemens NX | Fusion 360 | Onshape | Simplify3D | Blender | YOLO | Supervisely | Canalyzer
Communication:
CAN | CANFD | I^2C | SPI | UART

Other

Michigan Climbing Club	2022-Present
Boy Scouts of America	2016-2021
Varsity Golf, all-county	2018-2020