Terry Tao

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631-951-7354

terrytao19.github.io/portfolio[](https://terrytao19.github.io/portfolio/)

**Objective**Looking to begin my ca­­reer by applying experience from **MRacing**, **FIRST Robotics** and **personal projects**. Seeking to further develop my practical knowledge with **strong technical mentorship** at an **automation**, **controls**, or **systems** focused **internship** opportunity during **spring-summer 2023**.

**Education**

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**University of Michigan** **|** Ann Arbor, MI

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

|  |  |
| --- | --- |
| * EECS 203 **|** Discrete Math * EECS 280 **|** Data Structures | * MATH 216 **|** Differential Equations * ROB 101 **|** Computational Linear Algebra |

**Harborfields High School** **|** Huntington, NY

**Advanced Regents Diploma** 2018-2022

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| --- | --- | --- |
| * GPA: 4.0 | * AP Scholar With Distinction | * SAT – 800 Math, 750 English |

**Projects and Activities**

(See Portfolio)

[Qr code

Description automatically generated](https://terrytao19.github.io/portfolio/)

(See YouTube) [Qr code

Description automatically generated](https://www.youtube.com/@terrytao19)

**Autonomous Formula Electric Racing (MRacing)** Sept 2022 - Present

* **Developed an Extended Kalman Filter SLAM algorithm to map and visualize a pre-recorded lap**
* **Trained a custom YOLOv7 object detection model for cone detection**
* **Implemented a perspective-n-point algorithm to extract xy positions of cone landmarks**
* **Programmed a track boundary estimator and track mid-line regression algorithm**
* **Integrated regressed track radius and vehicle velocity data to build an overhead map of the racetrack using a single monocular camera**
* **Compiling source code into ROS nodes to be installed on an Nvidia Jetson**

**FIRST Robotics (FTC)** 2018-2022

* **Ranked top 40 internationally at Maryland Tech Invitational (2022)**
* **Programmed a triple dead-wheel odometry localizer to perform tasks fully autonomously and optimized velocity trajectories to achieve a top 40 individual score**
* **CAD lead, Co-programmer, Club President (2022)**
* **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 kinematics and dynamics control algorithm**
* **Implemented IMU acceleration dampening on end effector**

**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**

**Software: Solidworks | Fusion 360 | Onshape | Simplify3D | Blender | YOLO | Roboflow | MS Office**

**Spoken Languages: Mandarin (Native)**

**Leadership**

**Robotics Club President** 2021-2022

**Senior Patrol Leader (Boy Scouts)** 2020-2021

**Other Activities**

**Michigan Climbing Club** 2022-Present

**Boy Scouts of America** 2016-2021

**Varsity Golf, all-county** 2018-2020