

Henry Liao

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Education

Georgia Institute of Technology, Atlanta, GA

August 2021 ~ May 2024

- Major: Computer Science
- GPA: 4.0

Tesla STEM High School, Redmond, WA

September 2017 – June 2021

Relevant Coursework: Robotics and Perception, Computer Organization and Programming, Design and Analysis of Algorithms, Data Structures, Object-Oriented Programming, Differential Equations, Multivariable Calculus, Linear Algebra, Probability and Statistics

Skills

Programming Proficiency

- Languages: Java, Python, C#, Android Studio, C++, MATLAB
- Packages: OpenCV, ROS, Numpy, Firebase, Git
- Operating Systems: Linux, Windows

Activities

RoboJackets Competitive Robotics

September 2021 – Present

- Applied OpenCV package to create a segmentation map for lane recognition
- Completed training in robotics theory (coordinate frames, particle filters, SLAM, and path planning), ROS (services/topics), and C++ (references, inheritance, parallelism)
- Implemented drone stabilization, guidance, and path planning algorithms for University Rover Challenge
- Built navigation system with Nav2 package for differential drive rover to plan and execute autonomous traversal tasks

AutoRally Project @ ACDS Lab | Undergraduate Researcher

June 2022 – Present

- Constructed Gazebo world for virtual autonomous driving simulation via image recognition
- Established deep optical flow dynamics for pixels of interest in simulated world

AGILE Team @ LIDAR Lab | Undergraduate Researcher

July 2021 – September 2022

- Created PID control script for multiple drones connected over router using Python and ROS in Ubuntu
- Employed AprilTag recognition pipeline for drone following behavior
- Built rosbag pipeline for recording and republishing drone data

Projects

MIT Battlecode Competition

January 2022 – February 2022

- Led development of a bot which participated in the annual automated Battlecode RTS game competition, ranked 17th out of 220 teams
- Designed and implemented communications architecture, pathing algorithms, and bot behavior in Java

MyChapter FBLA Chapter Management App

January 2021 – June 2021

- Created app for managing FBLA club chapters in Android Studio which offered Facebook, Google, or custom authentication
- Synced, indexed, and retrieved user profile and chapter data using Firebase NoSQL database