

Binghuan Wu 吴秉寰

And most importantly, have the courage to follow your heart and intuition.

Education

2023.9-Present **B.E. in Automation**, Sophomore, *Tongji University*, China.

- GPA 4.4/5.0 (1st year)

Research Experience

2024.6-2024.7 **Research Intern**, *Institute of Precision Optical Engineering*, Tongji University.

- Acquired fundamental research skills, including paper reading and summarization, and mathematical modeling using MATLAB.
- Contributed to the mathematical modeling of ECDL lasers by developing Matlab code for simulation and analysis.

2023.9-Present **Project Leader**, Autonomous Driving Group, *Tongji University Lotus Racing Team*.

- Contributed to the algorithm of Hough Transformation in path planning pipeline, upgraded the performance of path planning by replacing the original Least Squares Method.
- Implemented different motion planning and control strategy such as Stanley Method, Pure Pursuit and Incremental PID.
- Performed real-vehicle debugging and collected LiDAR point cloud data. Tested the performance of the point cloud clustering algorithm using the ROS RViz tool.

Technical Skills

Programming C++ (Moderate), Python, Swift, MATLAB (Basic)

Fabrication Electrical Design

Tools Linux, ROS1, CUDA(Basic), PyTorch (for computer vision), Isaac Sim/Gym (Learning)

Control PID, Stanley Method, Kalman Filter (For autonomous driving racecar), MPC(Basic)

Projects and Awards

- [1] Reproducing the PULSAR drone system from the University of Hong Kong. (Ongoing)

- [2] Finish the electrical design of an Running LED with the shape of Open AI logo.
- [3] Build an iOS application with the theme of Tongji University.
- [4] 3rd Prize in Applied Mechanics, Tongji University, 2024.
- [5] Merit Award in Structural Mechanics, Tongji University, 2024.

Student Services

2023-Present Student Staff, Students' Association for Science and Technology of Tongji Univ.

2023-Present Long-term Volunteer, Automobile Culture Promotion Society of Tongji Univ.