

# ZHIHAO WANG

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## 🎓 EDUCATION

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**Harbin Institute of Technology**, Weihai Campus, Shandong, China Sep. 2020 – Present

- B.S. in Intelligent Automotive Engineering, Expected June 2024
- GPA:**92.36**/100 Rank:**3/73** Top:**4.1%** TOEFL:**99** CET6:**639**
- Major courses: Linear Algebra and Analytic Geometry(99), Calculus(96), Circuits and Electronics(99), Environment Perception of Intelligent Vehicle(98), Planning and Decision-Making for Intelligent Vehicle(96), Structure of Automobile(97), Automatic Control Principle(99), Data Mining(94)

## 🔗 EXPERIENCE

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**Harbin Institute of Technology's Formula Student Driverless Team** Feb. 2021 – Present

*Team Leader of Driverless System* Shandong, China – Instructor: Jianfeng Wang

- \* Training and Implementation of Yolov5 Model with Nvidia TensorRT for Fast Cone Detections
  - Created customized dataset with data enhancement tricks, used for network training
  - Optimized detection speed through CUDA programming, boosted from less than 50 fps to 140+ fps
  - Migration from x86 PC to ARM platform including Jetson and Huawei Mobile Data Center (MDC)
- \* Cones' Visual Features Extraction and Visualization Based on ORB-SLAM2
  - Calibration of a monocular camera and joint calibration between a lidar and a camera
  - Restricted input image with cone detection then extract ORB features from interested regions
  - Projected 2D features to 3D space and utilized ICP algorithm to iterative optimize camera poses
- \* Flexible and Multi-use Remote Terminal Control Node via SSH
  - It displays completely and elegantly within a terminal window, able to fit windows' size automatically
  - This auto starts all nodes for autonomous driving, receives and shows messages, displays vehicle status

**Tencent Autonomous Driving Simulator Software Development** Nov. 2022 – Present

*Core Team Member* Shandong, China – Instructor: Quan Wang

- Produced an interface program, transferring virtual camera data from simulator to ROS's sensor\_msgs::Image
- Completed structure and content of the class *Environment Perception of Intelligent Vehicle*

**Overall Integration Technology Development of Ground Unmanned Vehicles of Beijing**

**Institute of Aerospace Launch Technology** Mar. 2023 – May. 2023

*Core Team Member* Shandong, China – Instructor: Jianfeng Wang

- Formed a new CAN FD program based on Huawei communication rules and deployed it with cross-compile
- Migrated project's all former ROS packages from Jetson to Huawei Mobile Data Center (MDC)

## 🏆 HONORS AND AWARDS

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*1<sup>st</sup> Prize*, Silver medal, Award on 2021 Formula Student Autonomous China (delayed by Covid-19) Jun. 2022

*1<sup>st</sup> Prize*, Bronze medal, Award on 2022 Formula Student Autonomous China Sep. 2022

*1<sup>st</sup> Prize Scholarship* (rank *1<sup>st</sup>* in major) May. 2023

*Other awards:* Excellent Student, *2<sup>nd</sup> Prize* Physics Competition for Colleges in Shandong 2022

## ⚙️ MISCELLANEOUS

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- Personal Website: [zhwang.xyz](http://zhwang.xyz)
- Languages: English - *Fluent*, Mandarin - *Native speaker*
- Programming Languages: C++(mastered), Python(skilled), C, Shell, HTML, CSS, Markdown, LaTeX
- Prospective: Desirous of delving deep into the cutting edge in fields like Autonomous Driving, AI+Robotics