JIANMING XING

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EDUCATION

Harbin Institute of Technology, Weihai
Bachelor of Mechanical Design, Manufacturing and Automation 2021-2025
GPA: 3.14/4
Awards & Honors:
Second-class People's Scholarship – Harbin Institute of Technology (Top 11/132) Nov 2022
18th National Undergraduate Intelligent Vehicle Competition – National Second Prize Aug 2023
Core courses: Calculus B(92), Linear Algebra and Analytic Geometry(94), The C Programming Language(92), Mechanics of Materials(87), Principles of Computer Organization(86)
Harbin Institute of Technology, Shenzhen
Second Bachelor of Computer Scinence 2025-2027

PROJECT EXPERIENCE

Lightweight Boat Robot – Upper Computer Scheduling System August 2022 – January 2023

- Developed an upper computer system using Qt5 and Python, integrating OpenCV to display camera feeds and coordinate data. Enabled real-time socket-based communication with the robot.
- Built a ROS1-based central scheduler coordinating modules such as red light detection and character recognition. Implemented dynamic mode switching via runtime flags and move_base trajectory planning.
- Completed full autonomous navigation through tasks including obstacle avoidance, slope climbing, S-curve traversal, and parking.

Robot Welding System with Digital Twin and Seam Recognition October 2024 – June 2025

- Designed a C++/Qt upper computer to control a six-axis welding robot, supporting real-time monitoring, serial port scanning, and multi-servo actuation.
- Built a seam segmentation module using U-Net with VGG encoder, trained with enhanced datasets and transfer learning.
- Implemented a digital twin in OpenGL with optimized DH parameters, achieving real-time 3D visualization. Verified system integration with over 90% seam detection accuracy.
- Demonstrated reliable seam detection and welding simulation through integrated testing with OpenGL-based digital twin. The system achieved over 90% seam detection accuracy and enabled real-time 3D visual feedback during task execution.

LABORATORY EXPERIENCE

Joint Innovation Laboratory August 2022 - January 2024
AI and Robotics Group Member

- Designed and programmed an autonomous STM32-based line-following vehicle; integrated Bluetooth control and robotic arm coordination for dynamic object retrieval tasks.
- Migrated and modularized Robomaster vision codebase to ROS2 framework; replaced native C++ threading with ROS nodes, improving real-time image acquisition and development scalability.

TECHNICAL SKILLS

English Skill	CET4, CET6
Programming Languages	C/C++, Python, MATLAB
Tools & Frameworks	ROS1/2, Qt, OpenCV, Keil5, STM32, Solidwork
Operating Systems	Ubuntu, Windows