Lanbo Zhao
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EDUCATION

Eng in Electronic Information Engineering (Joint Program)
University of Electronic Science and Technology of China (UESTC) & University of Glasgow **Sep 2022 – Jul 2026**
Bachelor of Engineering in Information Engineering

- Programme: 4+0 joint program — dual degrees from UESTC (China) and University of Glasgow (UK)
- GPA: 3.37/4.0 | Average Score: 80.45/100 (signal and system 92/100, Fundamentals of Analog Circuits 88/100, Probability Theory and Mathematical Statistics 94/100)
- Medium of Instruction: English

ACADEMIC EXPERIENCE

University Innovation and Entrepreneurship Training Program **Dec 2023-Sep 2024**

Fitness Assistance System Based on Computer Vision | Team Leader

- Core Development: Led the design of a Linux-based system using human pose estimation (keypoint detection) to automate motion counting and quantitative performance scoring.
- System Integration: Integrated ultrasonic sensors and voice modules to enhance spatial awareness and real-time interaction, significantly improving system intelligence.
- Data Synchronization: Developed a WeChat Mini-program interface for real-time data visualization, enabling users to track workout metrics seamlessly.
- Leadership: Managed a team through the full development lifecycle, demonstrating strong capabilities in system architecture and collaborative problem-solving.

Freshman Extracurricular Innovation and Practice Program **Jan 2023-Oct 2023**

A car system based on gesture recognition | Developer

- System Architecture: Designed a master-slave architecture featuring a PC-based host for vision recognition and an STM32 microcontroller for execution, utilizing UART/Serial communication for real-time command transmission.
- Embedded Development: Developed low-level hardware drivers and utilized PWM (Pulse Width Modulation) for precise control of motors and robotic arm actuators.
- Functional Integration: Successfully implemented gesture-guided navigation and manipulation, enabling the system to perform complex tasks such as targeted movement and object grasping.

Unmanned Aerial Vehicle Project **Mar 2025-Jun 2025**

Autonomous UAV with Vision-Based Grasping | Group Leader & Flight Logic Designer

- System Architecture & Integration: Spearheaded a 6-member team to design and assemble an autonomous Unmanned Aerial Vehicle (UAV) from scratch, managing hardware selection and system-level integration for a full mission profile (takeoff, navigation, and landing).
- Protocol & Communication: Engineered autonomous flight logic by establishing a high-efficiency communication bridge between the flight controller and OpenMV (host computer) via the Mavlink protocol, ensuring real-time synchronization of vision data and flight commands.
- CV-based Control & Grasping: Developed robust object detection and manipulation algorithms that utilize visual feedback for dynamic pose correction, significantly enhancing the precision and stability of the aerial gripper in complex environments.
- Technical Impact: Successfully demonstrated end-to-end autonomy, from target identification to precision grasping, showcasing strong capabilities in closed-loop control and embedded system development.

COMPETITION EXPERIENCE

The National College Students' Embedded System Contest **Mar 2024-Aut 2024**

Award:Third Prize in the Southwest Region

- System Design & Leadership: Spearheaded the end-to-end development of a smart tactile stick system, leading a multidisciplinary team to implement a hardware-software integrated solution for pedestrian safety.
- Computer Vision & Hazard Detection: Developed an object recognition module leveraging keypoint detection to identify road obstacles and hazards, implementing a distance-based proactive warning system for real-time user protection.
- IoT & Remote Tele-assistance: Engineered a real-time data pipeline synchronized with a WeChat Mini-program, allowing remote caregivers to monitor environmental feeds and provide navigation support in complex urban scenarios.
- Multi-modal Interaction: Integrated voice synthesis modules and localized processing to enhance human-machine interaction, significantly improving the device's accessibility and user experience (UX).

AWARDS AND SCHOLARSHIPS

Model Student Scholarship(2023)
Science and Technology Innovation Scholarship(2024)(Top 25%)