Zizhe Zhang

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EDUCATION

University of Pennsylvania, School of Engineering and Applied Science · Philadelphia, PA
Candidate for MSE in Electrical Engineering, May 2026
- Cumulative GPA 3.9/4
- Coursework: Linear Systems Theory, Introduction to Robotics, Applied Machine Learning

University of California, San Diego · San Diego, CA
Exchange Student, Jan 2023 - Mar 2023
- Major GPA: 3.85/4
- Coursework: Intro Deep Learning & Apps, Intro to Autonomous Vehicles

Southeast University, School of Instrument Science and Engineering · Nanjing, China
BE in Measuring Control Technology & Instruments, June 2024
- Coursework: Signal and Systems, Principles of Automatic Control, Sensor Technology

HONORS & AWARDS

Outstanding Bachelor's Thesis, Southeast University · *Jun 2024*
Merit Student, Southeast University · *May 2021*

PUBLICATIONS

Image-Based Visual Servoing for Enhanced Cooperation of Dual-Arm Manipulation
<u>Zizhe Zhang</u>, Yuan Yang, Wenqiang Zuo, Guangming Song, Aiguo Song, Yang Shi
IEEE Robotics and Automation Letters (RA-L), 2025

RESEARCH EXPERIENCE

University of Pennsylvania · Philadelphia, PA
Research Assistant at **Figueroa Robotics Lab**, advised by **Prof. Nadia Figueroa** · *Oct 2024 - Present*
- Ensuring feasibility for passivity-based torque control via learned kinematic constraint mappings
- Using predicators to achieve real-time and adaptive bilevel (task/motion) planning
- Vision-based learning with force feedback for general manipulation tasks

Southeast University · Nanjing, China
Research Assistant at **Robotic Perception and Control Lab**, advised by **Prof. Yuan Yang** · *Dec 2023 - Aug 2024*
- Designed a shared teleoperation system control based on visual servoing
- Designed a dual-arm collaborative control system based on object simulation and image-based visual servoing

Research Assistant at **Automotive Safety Technology Lab**, advised by **Prof. Dong Wang** · *Mar 2022 - Jun 2023*
- Applied edge detection to classify the topography on Mars to avoid or alert soft ground that may lead to subsidence
- Designed a wheeled leg to detect the ground in front of the rover and analyzed the detected force signals to predict the passing ability of the rover

Research Assistant at **Advanced Navigation Technology Lab**, advised by **Prof. Xuanpeng Li** · *Jul 2021 - Sept 2021*
- Used library PYTS to visualize the signals and then built up a CNN to extract the inner features of the ADS-B radio signals and classify the signals

PROFESSIONAL EXPERIENCE

Schneider Electrics · Shanghai, China
Technical Intern · *Jun 2023 - Aug 2023*
- Engaged in IGBT thermal simulation, capacitor lifetime calculation, EMC test, Kylin project circuit design, etc.

PROJECTS

University of California, San Diego · San Diego, CA
Autonomous Vehicle based on GPS & DoF Camera, *Team of 3* · *Jan 2023 - Mar 2023*

- Utilized Python and VESC to control the robot, DoF camera to find and track lanes, centimetric GPS and PID method to record and follow paths
- Brought the robot to a complete stop by using PyVesc and DepthAI libraries to run stop sign detection on the camera
- Enabled the robot to respond correctly to speed limit signs by performing text detection on the camera

Southeast University Nanjing, China

Design and Implementation of a Weather Query and Display Module, *Team of 3, Leader* *Jan 2023 - Feb 2023*

- Used ASM to design the function and organize each part of the MCU. Designed a Weather Query and Display Module which can choose and display weather information of several customized cities.
- The whole project is based on a small device which can be attached to the door and the interaction logic is easy to understand so it can be used as smart home device.

New Method of Wheel Force Decoupling, *Team of 5, Leader* *Jul 2022 - May 2023*

- Wrote a program using linear decoupling to decouple a three-axis wheel force.
- Advanced the program by analyzing and visualizing the original data and the results.

SKILLS

Programming & Scripting: C/C++, Python, MATLAB, Bash, CMake

Robotics: Franka Emika Panda, UR3e, UR3, ROS, Coppeliasim, Pybullet, MoveIt, Gazebo, Altium Designer, Cadence

Languages: Chinese (Native proficiency), English (Fluent proficiency)