

Zhongyu Chen

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Nationality: China

Personal Profile

A Mechanical Engineering student dedicated to Robotics and Machine Learning, with interest in robot structure, manipulation and locomotion.

Education

ZJU-UIUC Institute <i>B.E in Mechanical Engineering</i>	Champaign, Illinois / Zhejiang, China
Zhejiang University, China <i>B.E in Mechanical Engineering</i>	09/2023 – Present GPA: 3.89/4.30
University of Illinois at Urbana-Champaign, U.S. <i>B.E in Mechanical Engineering</i>	09/2023 – Present GPA: 3.79/4.00

Relevant Coursework: Control Systems, Motion Control, Digital Signal Processing, Robotics, Computer-Aided Design, Embedded Systems.

Research

UAV Crack Detection and Path Planning Jun 2024 - Sep 2024
Summer Research ZJU

Advisor: Prof. Jiangpeng Shu

- Conducted research on UAV-based glass curtain wall crack detection using YOLOv8
- Built and annotated 8,436 facade images for multi-type crack classification.
- Implement RRT algorithm for facade inspection path planning.

Swarm Underwater Robots: Structure and Control Oct 2025 - Current
Xingwen Zheng Research Group ZJU

Advisor: Prof. Xingwen Zheng

- Designed a modular docking mechanism for autonomous robots connection.
- Used CAD to design the whole body structure.

Enhancing Manipulation Success Rates via Failure-Aware Diffusion Models Feb 2026 - Current
Physical Intelligent Lab ZJU - UIUC

Advisor: Prof. Hua Chen

- Deployed the ARX - L5 robotic arm platform, collected multi-modal data using teleoperator and trained them with following algorithm.
- Established a baseline for the bottle-capping task using the ACT algorithm, achieving basic trajectory imitation from expert demonstrations.
- Developed a Diffusion-based policy trained on a joint dataset of successful and failed trials, significantly enhancing the success rate.

Reinforcement Learning for Quadruped Locomotion on "Jueying-Lite3" April 2026 - Current
Physical Intelligent Lab ZJU - UIUC

Advisor: Prof. Hua Chen

- Developed and trained a locomotion policy for the "Jueying-Lite3" quadruped robot using the PPO algorithm within the MJLab simulation framework.
- Implemented a parallel training environment for four robots simultaneously to accelerate data collection and improve policy robustness.
- Focused on Sim2Sim and Sim2Real transfer techniques, optimizing reward functions and domain randomization to bridge the reality gap for stable real-world deployment.

Internship

ManiSkill-ViTac Challenge 2026 (CVPR & ICRA Workshop) Jan 2026 – Current
Software Engineering Research Intern Online / THU

Advisor: Prof. Rui Chen

- Deployed $\pi_{0.5}$ model for robotic manipulation tasks.
- Fine-tuned foundational policies using high-quality expert demonstration data for both single-arm and dual-arm manipulation tasks.

Leadership

Illini Puller (1/4 Scale Tractor Team)

Aug 2025 – Nov 2025

CAD Subteam Leader

UIUC

- Mentored junior members on CAD modeling.
- Design and fabricated heat-shield system for exhaust, using CAD software, sheet-metal bending, and welding.
- Researched and sourced part to optimize vehicle performance and minimize cost.

Basketball Club

Jun 2024 – Current

President

ZJU - UIUC

- Spearheaded the organization of campus-wide basketball tournaments held every semester.

Academic Support

ECE110: Introduction to Electronics

Spring 2026

Teaching Assistant

ZJU - UIUC

Advisor: Prof. Yu Lin, ZJU - UIUC

- Held weekly office hours to answer students' questions about course material.
- Created new exam questions and added them to the course question bank.
- Mentored student teams in the design and debugging of the line-following robot.

Patent

Zhongyu Chen, Co-Inventor, *An Underwater Robot Capable of Autonomous Tool Change and Its Method*, Internal Ref No: ZL-2026-1-01610 (Pending)

Honors & Awards

Outstanding Student, Zhejiang University	03/2026
Academic Excellence Award, Zhejiang University	03/2026
Zhejiang University Scholarship-Second Prize	03/2026
Academic Progress Award, Zhejiang University	03/2026
Artistic and Athletic Achievement Award, Zhejiang University	03/2025, 03/2026
Excellent Exhibition Award, Summer Research Program, Zhejiang University	11/2024

Skills

Programming: Python, MATLAB, Linux (Ubuntu), Git, 050LaTeX

Robotics & Simulation: ROS2, MuJoCo, Isaacgym, IsaacLab, PyTorch

Design: CAD (Fusion360, SolidWorks)

Languages: English (TOEFL 105), Mandarin (Native)