Zhenglang Weng

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EDUCATION

University of Science and Technology of China (USTC) — *Hefei, Anhui, China*
School of the Gifted Young, Senior Year — Sep. 2022 - Present
- **Major**: Electronic Information Engineering   **Overall GPA**: 4.03/4.3   **Ranking**: 1/149
- **Relevant Courses**: Digital Signal Processing (97), Signal and System (92), Electrodynamics (98), Linear Algebra (95), Equations of Mathematical Physics A (96), Statistical Signal Analysis and Processing (95)
- **Standardized Test**: TOEFL: 111 (Reading: 30, Listening: 30, Speaking: 23, Writing: 28)

University of Chicago — *Chicago, Illinois, USA*
Computer Science Summer Research Program — Jul. 2025 - Aug. 2025

PUBLICATION

[1] Jianshu Zhou, Junda Huang, Honghao Guo, **Zhenglang Weng**, Boyuan Liang, Ian Zhang, Qiguang He*, Masayoshi Tomizuka*, *Embodied Origami Robots: Bridging Physical and Computational Intelligence for Adaptive Manipulation and Locomotion*, Submitted to Advanced Science.

[2] Yifan Zou, Matthew Jeung, **Zhenglang Weng**, Willa Yunqi Yang, Ken Nakagaki*, *TorquePods: Multi-Module Coordinated Flywheel-based Haptic Toolkit for Advanced Haptic Design*, Submitted to CHI.

[3] Jiawen Yao, Yifan Zou, Alan Pham, **Zhenglang Weng**, Chi Wang, Liang He, Ken Nakagaki*, *Mass.mov: Towards Movement-based Interactive Material using 'Mass with Constraints'*, Submitted to CHI.

PROJECT EXPERIENCES

In-hand Assembly using Dual Dexterous Compliant Hand
Advisor: Dr. Jianshu Zhou — University of California at Berkeley (Remote) — Sep. 2025 ∼ Present
- Configured a full training pipeline in Isaac Lab, implementing the robot's URDF, designing the assembly task's observation/action space and reward function to enable RL policy learning for in-hand part assembly.
- Implemented a simulation for the compliance of a pneumatic-driven dexterous hand in Isaac Sim.
- Developing an algorithm that integrates haptic data to accomplish in-hand dexterous assembly.

Vision-Language Prompted Action Generation with Conditional Flow Matching
Undergraduate Graduation Thesis | Advisor: Prof. Jiahu Qin — USTC — Oct. 2025 ∼ Present
- Developing an algorithm pipeline utilizing generated videos as training data for action generation based on conditional flow-matching.
- Successfully implemented FoundationPose, a state-of-the-art 6D object pose estimation framework from RGB images.

Visual Guided Cube Recognition and Robotic Arm Manipulation
Course Project for System and Control Experiment III | Advisor: Prof. Fei Zhang — USTC — Sep. ∼ Nov. 2025
- Implemented an eye-in-hand vision system to detect blocks and estimate their 6-DoF poses.
- Determined optimal grasp orientations based on visual feedback and executed block picking and stacking by integrating manually annotated path points.

Multi-Module Coordinated Flywheel-based Haptic Toolkit for Advanced Haptic Design
Advisor: Prof. Ken Nakagaki — University of Chicago — Jul. ∼ Aug. 2025
- Elaborated a compact, custom PCB for a novel modular haptic interface system based on flywheel actuation.
- Implemented Bluetooth communication protocol that reduces latency by 90%.
- Derived theoretical force-torque transformation formulas and implemented real-time measurement for technical evaluation using a 6-DOF Force/Torque sensor.

Four-wheeled Mecanum Wheel Robot with Pneumatic Gripper

Advisor: Prof. Huichun Ye — USTC   Mar. ~ Aug. 2023

- Designed and constructed the robot, incorporating cylinders for efficient stair climbing.
- Employed AprilTag to locate and navigate the robot to assigned locations visually.
- Developed custom PCBs for comprehensive robot control and programmed the MCU to optimize robot control.

HONORS AND AWARDS

Special Scholarship for Elite Class in Information Technology| *USTC*   Nov. 2025
Virtue Cultivation and Public Devotion Scholarship | *USTC*   Apr. 2024
Outstanding Undergraduate Scholarship-Gold Prize (Top 3%) | *USTC*   Nov. 2024
Scholarship Issued by JAC&NIO Enterprise (Top 2%) | *USTC*   Nov. 2023
Contemporary Undergraduate Mathematical Contest in Modeling (1st in Anhui, Second Prize National)   Dec. 2023
Robogame Robot Championship (Second Prize) | *USTC*   Nov. 2023

TEACHING EXPERIENCES

Teaching Assistant for Computer Programming A   Fall, 2024

- Assisted in the teaching of the C programming language. Thoroughly reviewed various uses of pointers in C.
- Utilized an online openjudge platform to facilitate program assessments.

SKILLS

Programming Language: C, C++, MATLAB, Python, Verilog HDL
Software: GeoGebra, Mathematica, SolidWorks, Altium Designer, Fusion360, ROS, IsaacSim, IsaacLab
Hardware: Heat gun, Soldering station, Bambu Lab, PPG, EDFA, Optical Attenuator, UR Robot

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Class Representative for Academics
Member of the USTC Ballroom Dance Association
Volunteer of the USTC Science and Technology Opening Week (2023 & 2024)