

Zedi Wang

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Research & Engineering Interests: Embodied AI, Multimodal LLMs, Computer Vision, Systems Optimization

EDUCATION

Sun Yat-sen University (SYSU)

M.S. in Computer Science and Technology (HCP Lab) | Expected Graduation: Jun. 2029

Guangzhou, China

Sep. 2026 – Present

Sun Yat-sen University (SYSU)

B.S. in Computer Science and Technology | GPA: 3.7 / 4.0 (Outstanding Thesis, Ranked 1st)

Guangzhou, China

Sep. 2022 – Jun. 2026

INTERNSHIP EXPERIENCE

Tianyuanying Technology

Project Lead / Embodied AI Algorithm & Systems Intern

Shenzhen, China

Apr. 2026 – Aug. 2026

- Spearheaded the end-to-end R&D of a full-stack robotic painting system (vision perception → stylized stroke generation → real-time C++/ROS arm control).
- Secured **1 National Invention Patent as First Inventor** (Application Accepted); deployment featured on **Guangdong TV News** and People's Daily.
- Formulated vectorized path extraction and B-spline trajectory smoothing with Z-axis interpolation (< 1.0 mm error), achieving zero-fault 70s execution in live exhibitions.

Guangdong Zhongshi Info Tech (Joint Project with Ant Group & AgBank)

AI & Backend Algorithm Engineering Intern

Guangzhou, China

Apr. 2024 – Oct. 2024

- Built production-grade OCR parsing (OpenCV perspective correction + custom CRNN) for Alipay and Agricultural Bank of China vehicle services, handling extreme mobile noise under strict latency standards.
- Integrated NLP tokenization and Named Entity Recognition (NER) with knowledge-graph RAG retrieval, significantly reducing intent misclassification in multi-turn dialogues.

Guangdong Youshu Digital Technology

Backend Software Engineering Intern

Guangzhou, China

Feb. 2024 – Apr. 2024

- Designed backend architecture and high-availability RESTful APIs for a data valuation engine, refactoring complex computation logic to guarantee stability under high-concurrency traffic.

PUBLICATIONS & RESEARCH

RecoverBench: Systematic Benchmark for Error Recovery in Robotic Manipulation | NeurIPS 2026

Apr. 2026 – Aug. 2026

- Co-designed a hierarchical error taxonomy (slippage, pose shifts, occlusion) and cleaning pipeline; led interactive recovery trajectory collection (RGB-D & proprioception) to benchmark VLA and ACT policies.

MM-OPERA: Open-ended Association Reasoning Benchmark for MLLMs

| NeurIPS 2025

May 2024 – Jun. 2025

- Built a multi-stage QA pipeline across 11,497 instances; independently led human baseline evaluations (921 tasks) and LLM-as-a-Judge reliability testing (0.077 alignment diff, verbosity/position bias).

Physics-Constrained Deep Learning for Battery Health Estimation

| Undergraduate Thesis

Dec. 2025 – May 2026

- Integrated Coulomb Integration Regression (CIR) physics priors and designed a TempFiLM conditioning module to decouple thermal noise, reducing MAE/RMSE by **67%/53%** over standard Transformers.

SELECTED SYSTEMS & SOFTWARE PROJECTS

Low-Level Image Operator Performance Optimization | C/C++, SIMD, Computer Architecture

Nov. 2024 – Dec. 2024

- Re-engineered compute-intensive image operators from hardware perspectives via memory alignment, Cache locality tuning, and SIMD instruction sets, achieving a **40x+ speedup** over baseline implementation.

SubPilot: Open-Source Subtitle Synchronization System | Project Lead & System Architect

Apr. 2025 – Jul. 2025

- Led full-stack architecture design, modular refactoring, and agile lifecycle management for an open-source subtitle platform, breaking the closed-source monopoly of commercial tools (Arctime).

TECHNICAL SKILLS & HONORS

- **Languages & Systems:** C/C++, Python, SIMD Optimization, Memory Alignment & Cache Tuning, Linux, Docker, Git, ROS/ROS2, RESTful APIs.
- **AI & Databases:** PyTorch, TensorRT, OpenCV, Vector & Graph Databases (RAG), MLLM, VLA / ACT / Diffusion Policy, ManiSkill 3.
- **Selected Honors:** National 1st Prize in Chinese Collegiate Mathematics Competition (2022); National Encouragement Scholarship (2023); Sole 1st Prize in SYSU Math Modeling Contest (2024).