



“Talk is cheap. Show me the code.”

Education

The University of Hong Kong

PH.D. IN EMBODIED AI (INCOMING)

Hong Kong SAR

Sep. 2026 - 2030

- School of Computing and Data Science (CDS), advised by Prof. Yanchao Yang.
- Research direction: data-centric embodied AI — what data robot policies need, and how to close the loop between collection and policy improvement.

Beijing Institute of Technology

B.ENG. IN COMPUTER SCIENCE, XU TELI HONORS PROGRAM

Beijing, China

Aug. 2022 - Jun. 2026

- GPA **3.7/4**, overall rank **3/118**; Dewin Scholarship. English: CET-6 **583**.

Publications

- [1] RoboLineage: Agent-Native Data Lifecycle Governance Across Robot Policy Iterations
Qian Luo, **Wentao Guo**, Zhennan Qin, Nanchun Guo, Yunhan Zhao, Yi Ma, Yanchao Yang[†]
Conference on Robot Learning (CoRL) 2026 | arXiv:2606.22142 • project page • code
- [2] TwinRouterBench: Fast Static and Live Dynamic Evaluation for Realistic Agentic LLM Routing
Pei Yang*, Wanyi Chen*, Tongyun Yang, Pengbin Feng, Jiarong Xing, **Wentao Guo**, et al., Tianyu Shi[†]
Preprint, 2026 | arXiv:2605.18859 • project page • code
- [3] SCAL for Pinch-Lifting: Complementary Rotational and Linear Prototypes for Environment-Adaptive Grasping
Wentao Guo, Wenzeng Zhang[†]
*Preprint, 2025 · **Best Demo Award**, IROS 2025 Workshop on Collective Intelligence in Manipulation* | arXiv:2510.22738
- [4] Hoecken-D Hand: A Novel Robotic Hand for Linear Parallel Pinching and Self-Adaptive Grasping
Wentao Guo, Wenzeng Zhang[†]
*IEEE ROBIO 2025 · **Oral*** | arXiv:2510.13553
- [5] A Novel Robot Hand with Hoeckens Linkages and Soft Phalanges for Scooping and Self-Adaptive Grasping in Environmental Constraints
Wentao Guo, Yizhou Wang, Wenzeng Zhang[†]
*IEEE/RSJ IROS 2025 · **Oral*** | arXiv:2510.13535 • video

* equal contribution • † corresponding author

Research & Professional Experience

Transcengram

ALGORITHM INTERN

Shenzhen, China

Oct. 2025 - Aug. 2026

- Algorithm Department: teleoperation and data collection for manipulation policies — collection setup, demonstration quality, and how collected data feeds policy training.
- The RoboLineage data-lifecycle governance system came out of this work, formalizing the collect, review, train, evaluate and re-collect loop as typed artifacts.

X-Institute

STUDENT RESEARCHER, THEN X-SCHOLAR

Shenzhen, China

Dec. 2023 - Present

- Advised by Prof. Wenzeng Zhang; joint training with the Tsinghua University Tsien Excellence in Engineering Program since Oct. 2024.
- Designed, fabricated and evaluated three robotic hands (Hoecken-A, Hoecken-D, SCAL) from mechanism synthesis to 3D-printed prototypes and grasping experiments, yielding three first-author papers.
- Studied how task-aware hardware reshapes the action space of manipulation and reduces the burden on learned policies.

Selected Projects

mu0 · Deformable Object Manipulation

Best Innovation Solution, 2nd
WBCD @ ICRA 2026

POLICY TRAINING & DATA COLLECTION

2026

- Designed and standardized a task-specific action workflow for deformable-object manipulation.
- Collected UMI demonstrations, then supplemented targeted data with DAGger where the policy failed.
- Fine-tuned the manipulation model on the curated set for robust real-world execution.

Adaptive Grippers for Multi-Mode Grasping under Environmental Constraints

1st Place, ASME SMRDC

LEAD DESIGNER

2025

- Achieved vertical adaptability with linear linkages, enabling pinch-scoop switching against environmental constraints.
- Fabricated four 3D-printed prototypes for systematic validation; published as IROS 2025 and ROBIO 2025 papers.

MoYiXing · Modular Community Service Robot (LiDAR + 6-DOF Arm)

2 national first prizes

PROJECT LEAD & ALGORITHM ENGINEER

2023 - 2024

- Led a multifunctional service robot: LiDAR navigation, 6-DOF grasping, fisheye perception, monitoring, cleaning and dialogue.
- Built 360° vision stitching, YOLOv8 detection, and an ASR+TTS dialogue system; modularized them for plug-and-play use.
- Deployed DQN-based habit learning and semi-autonomous execution on Jetson Nano.

YiBao · On-Device Meeting Agent (Jiuge LLM + Local DB + RAG)

National 3rd Prize, Open-Source
Innovation

PROJECT LEAD

2024

- Built an on-device meeting agent with summarization and retrieval-augmented Q&A on top of the Jiuge edge LLM.
- Integrated FunASR and SenseVoice for real-time speech-to-text; handled long meetings with MapReduce-style summarization and incremental vector-KB updates.
- Three RAG optimizations: DPO/GRPO-tuned query planning, confidence gating (GECE), and adversarial training against noisy context.

Yi-Dian-Yi-Di · Digital Twin + Industry LLM for Grid Resilience

Special Prize, Challenge Cup

AI & DIGITAL TWIN DEVELOPER

2024

- Time-series models plus a local knowledge base for extreme-weather early warning, vulnerability assessment and damage-location prediction.
- An industry LLM connecting multimodal monitoring with operations research for proactive monitor-alert-dispatch-recovery, visualized on a digital-twin platform.

Bias Mitigation Pipeline for Sleep-Focused LLM Tasks

Disruptive Innovation Award

AI MODEL DEVELOPER

2024

- Built the full pipeline: sleep staging and scoring, automatic subjective/objective scoring, LLM analysis, and fine-tuning.
- Personalized models with RL on real-time individual data; used UAR-based clustering to measure and reduce group-level bias.

Honors & Awards INTERNATIONAL

Jun. 2026 **Best Innovation Solution**, 2nd WBCD Competition @ ICRA 2026

Oct. 2025 **Best Demo Award**, IROS 2025 Workshop on Collective Intelligence in Manipulation

Aug. 2025 **1st Place**, ASME Student Mechanism & Robot Design Competition (SMRDC)

California, USA

Feb. 2025 **Meritorious Winner**, Mathematical Contest in Modeling (MCM/ICM), COMAP

Feb. 2024 **Honorable Mention**, Mathematical Contest in Modeling (MCM/ICM), COMAP

DOMESTIC

Feb. 2026 **Bronze Award**, Deep Hackathon 2025

Dec. 2024 **National Second Prize**, 6th International Youth Artificial Intelligence Competition

Hebei, China

Nov. 2024 **National Grand Prize**, 19th “Challenge Cup” National Final — Problem-Driven Special Track

Beijing, China

Nov. 2024 **National Second Prize**, China Intelligent Robot Combat and Competition — Vision-based Antagonism

Beijing, China

Nov. 2024 **National Third Prize**, 7th Open Source Innovation Competition (CCF)

Shenzhen, China

Oct. 2024 **National First Prize**, RoboCup China Open — “Robot+” Competition

Xi'an, China

Aug. 2024 **National First Prize**, 7th China University Intelligent Robot Creative Competition

Zhejiang, China

Aug. 2024 **Disruptive Innovation Award**, X-Camp · X-Challenge Track 7

Shenzhen, China

Service & Extracurricular

Network Pioneers Association, Beijing Institute of Technology

Beijing, China

VICE DIRECTOR, TECHNOLOGY DEPARTMENT

Jun. 2024 - Jun. 2025

- Organized and livestreamed dozens of technical sharing sessions, with over 500 total attendees.
- Built data-crawling and related tooling in collaboration with the BIT Library.

Teli Academy, Beijing Institute of Technology

Beijing, China

PEER MENTOR

Sep. 2023 - Aug. 2024

- Mentored freshmen academically and personally; ran peer-led Q&A and review sessions for computer fundamentals and C programming.

School of Mechanical Engineering, Beijing Institute of Technology

Beijing, China

TEACHING ASSISTANT

Jul. 2023 - Aug. 2023

- TA for the 2023 “Intelligent Unmanned Systems +” Cross-Strait, Hong Kong and Macao Student Innovation Training Camp; helped shape project topics and answered technical questions.