

JUNWEN MIAO

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EDUCATION

Carnegie Mellon University

Aug 2026 - Dec 2027

Location: Pittsburgh, USA

M.Sc. in Machine Learning (Incoming)

Tongji University

Sep 2022 - Jun 2026

Location: Shanghai, China

B.Eng. in Software Engineering; GPA: 4.69/5.0

University of California, Irvine

Jun 2025 - Sep 2025

Location: Irvine, CA, USA

Exchange in Computer Science; GPA: 4.0/4.0

INTERNSHIP EXPERIENCE

AGIBOT, Embodied Research Centre

Mar 2026 - Aug 2026

Research Intern, VLA Pretraining Team; Mentors: Yi Liu, Jianlan Luo

Shanghai, China

- Contributed to the high-level component of τ 0-VLA through large-scale embodied and VQA data processing, model training, and high-level evaluation.
- Contributed to the low-level component of τ 0-VLA by implementing inference pipelines for Qwen3.5-based models, VLA models, and FAST-augmented VLA models, supporting downstream testing and open-loop evaluation.
- Built an end-to-end training, inference, and deployment pipeline for GR00T-N1.7, aligning dataset schemas, observation and action spaces, robot configurations, and control interfaces across multi-embodiments. Adapted and evaluated GR00T on ARX, Agibot G01, and Franka robots with both WBC and non-WBC control stacks, including open-loop trajectory visualization and real-robot experiments.

PUBLICATIONS

τ 0-VLA: a Hierarchical Robot Foundation Model with World-Model-Guided Test-Time Computation

Xiaowei Cai, Yunuo Cai, Bingao Chen, Jingxiao Chen, Zhi Chen, Siyuan Feng, Tengyu Hou, Jingshun Huang, Han Jiang, Runkun Ju, Dong Li, Mingxiang Li, Shaowei Li, Xinchun Li, Yifan Li, Yi Liu, Zhongyuan Liu, Jianlan Luo, Junwen Miao, Ruiqi Ni, Buqing Nie, Mingjie Pan, Xinlin Ren, Jianheng Song, Jiaxu Wang, Peiqi Wang, Sen Wang, Xiaoyan Wang, Dafeng Wei, Dongming Wu, Pengwei Xie, Pu Yang, Hangjian Ye, Xiangyu Yue, Jinyu Zhang, Qinglin Zhang, Xueyong Zhao, Yue Zhou. *(listed alphabetically)*

Preprint

Keywords: VLA Foundation Model, Long-Horizon Robot Manipulation, Test-Time Computation

AgentIAD: Agentic Industrial Anomaly Detection via Adaptive Memory Augmentation

Junwen Miao*, Penghui Du*, Yingying Fan*, Yi Liu, Yu Wang, Runze He, Lida Huang, Yan Wang.

Preprint

Keywords: Visual Reasoning, Multimodal Agent, Industrial Anomaly Detection

ClawBench: Can AI Agents Complete Everyday Online Tasks?

Yuxuan Zhang, Yubo Wang, Yipeng Zhu, Penghui Du, Junwen Miao, Xuan Lu, Wendong XU, Songcheng Cai, Dongfu Jiang, Yi Lu, Yunzhuo Hao, Minyi Lei, Kai Zou, Huifeng Yin, Ping Nie, Liang Chen, Wenhui Chen, Kelsey R. Allen.

COLM 2026 Workshop WAB

Keywords: AI Agents, Benchmark, Real-world Environment, LLM

RewardHarness: Self-Evolving Agentic Post-Training

Yuxuan Zhang*, Penghui Du*, Bo Li*, Cong Wei*, Junwen Miao, Huaisong Zhang, Songcheng Cai, Yubo Wang, Dongfu Jiang, Yuyu Zhang, Ping Nie, Wenhui Chen, Changqian Yu, Kelsey R Allen.

COLM 2026

Keywords: Reward Model, Harness Engineering, Image Editing

SportR: A Benchmark for Multimodal Large Language Model Reasoning in Sports

Haotian Xia*, Haonan Ge*, Junbo Zou*, Hyun Woo Choi, Xuebin Zhang, Danny Suradja, Botao Rui, Ethan Tran, Wendy Jin, Zhen Ye, Xiyang Lin, Christopher Lai, Shengjie Zhang, Junwen Miao, Shichao Chen, Rhys Tracy, Vicente Ordonez, Weining Shen, Hanjie Chen.

ICLR, 2026

Keywords: Multimodal Large Language Models, Sports Understanding, Benchmark

RESEARCH EXPERIENCE

AIR, Tsinghua University <i>Research Intern (Remote); Advisor: Yan Wang</i>	Apr 2025 - Aug 2026 <i>Beijing, China</i>
· Led AgentIAD, formulating industrial anomaly detection as a sequential inspection problem where the model actively acquires local, comparative, and external evidence. · Designed tool-aware SFT trajectories and GRPO rewards for adaptive tool use, visual memory, and retrieval memory. · Worked on embodied open-vocabulary detection, including affordance-aware localization, language-conditioned grounding, and task-relevant object perception.	
University of Waterloo <i>Research Intern (Remote); Advisor: Wenhui Chen</i>	Mar 2026 - May 2026 <i>Waterloo, Canada</i>
· Built execution-based evaluation tasks for web agents on real websites, with success measured by final states and HTTP-level outcomes. · Recorded interaction traces including screenshots, browser actions, agent messages, and network requests for reproducible failure analysis. · Built harness-based post-training settings where agents improve from execution feedback, reward checks, and generated trajectories.	
University of California, Irvine <i>Research Intern (On-Site); Advisor: Weining Shen</i>	Jun 2025 – Sep 2025 <i>Irvine, CA</i>
· Worked on table-tennis task annotation for SportR, covering rule understanding, event judgment, scoring logic, and fine-grained visual evidence. · Analyzed model performance on table-tennis reasoning tasks, with attention to grounding errors, ambiguous ball trajectories, and rule-specific failure cases.	

HONORS AND AWARDS

Outstanding Graduate Award for top undergraduate graduates at Tongji University	2026
Outstanding Student Scholarship Award for top students at Tongji University	2023, 2024, 2025
Outstanding Undergraduate Student Award for top 1% of undergraduate students	2024
National Undergraduate Mathematical Contest in Modeling Third Prize in Shanghai, China	2023