

Hangxing Wei

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🎓 Education

• M.Eng. in Cyber Science and Engineering

Sept. 2023 – June 2026

Wuhan University

Expected Graduation

- **Research Interests:** Latent Action Modeling, Vision-Language-Action Models, Game AI, RAG Systems
- **Core Modules:** Advanced AI Algorithms, Robot Kinematics, Distributed Systems Security

• B.Eng. in Cyber Science and Engineering

Sept. 2019 – June 2023

Wuhan University

GPA: 3.89/4.0 (Top 5%)

- **Honors:** Multiple First-Class Academic Scholarships
- **Key Skills:** Reverse Engineering, Cryptography, Linux Kernel Security, C/C++ Development

📄 Selected Publications

• villa-X: Enhancing Latent Action Modeling in Vision-Language-Action Models

Xiaoyu Chen*, **Hangxing Wei***, Pushi Zhang, et al.

ICLR 2026

🌟 180+ stars · 🌐 Project Page

- **Highlight:** Grounded latent actions in robot dynamics for VLA policy learning, achieving significant performance improvements across diverse simulation and real-world tasks while demonstrating zero-shot generalization in latent planning.

• AC-LAM: Learning Additively Compositional Latent Actions for Embodied AI

Hangxing Wei, Xiaoyu Chen, Chuheng Zhang, Tim Pearce, et al.

Under Review: ICML 2026

- **Highlight:** Proposed a novel additively compositional latent space that filters non-essential environmental features, enforcing the model to prioritize motion-specific representations for robust robot control.

• Beyond Human Demonstrations: Diffusion-Based RL to Generate VLA Data

Rushuai Yang*, **Hangxing Wei***, Ran Zhang*, et al.

Under Review: ECCV 2026

📄 arXiv:2509.19752

- **Highlight:** Proposed a diffusion-based RL method for collecting diverse, high-quality synthetic data in simulation environments.

💼 Internships

Microsoft Research Asia (MSRA) | Research Intern

Jan. 2024 – Present

- **Latent Action Model:** Spearheaded large-scale distributed training of Latent Action Models using ST-Transformer and VQ-VAE architectures on massive human and robotic motion datasets. Achieved successful motion transfer from human arms to robot arms, effectively aligning latent actions with 3D spatial execution.
- **RL Data Augmentation for Robotics:** Proposed a novel diffusion-based RL data generation paradigm to autonomously augment expert demonstrations. Lifted the average success rate of downstream VLA policies by **5.3%** on LIBERO benchmarks, significantly outperforming models trained exclusively on raw human data.

Beijing Puyuan Technology Co., Ltd. | R&D Intern

Dec. 2022 – Sept. 2023

- **Quantitative Backtesting Framework:** Engineered a high-performance, high-frequency market data ingestion and streaming order book calculation framework in C++ and Python. Integrated multiple Level-2 providers and established unified internal data protocols to accelerate strategy development and backtesting.
- **Enterprise RAG Backend:** Architected an asynchronous FastAPI backend for an enterprise RAG platform, encompassing Model Serving, a RAG Strategy SDK, and Document Parsing Services. Streamlined LLM/Embedding deployments (vLLM, TGI) to deliver robust knowledge base solutions for multiple corporate clients.

Selected Projects

UnifiedDataLoader for Robotics | Core Developer

Apr. 2025

- **Asynchronous Architecture:** Standardized unified access to **90+ datasets** across **10+ robotic platforms**, seamlessly scaling to manage **50M+ episodes** of diverse human and robot demonstrations.
- **Cloud-Optimized I/O Pipeline:** Engineered a streaming pipeline specifically optimized for **Azure Blob storage** by aggregating scattered episode data into **chunked tar archives**. Coupled with hierarchical indexing and hardware-accelerated decoders, this approach minimized request overhead and boosted single-node sampling throughput by **10×**.

Robot Teleoperation & Data Collection Framework | Core Developer

Mar. 2026

- **Decoupled Hardware Abstraction:** Architected a multi-layered teleoperation stack (Protocol, SDK, Universal Controller) to unify diverse manipulators (e.g., Piper, Realman), enabling seamless cross-platform integration.
- **Universal Telemetry & Logging:** Built a standardized data collection pipeline natively compatible with UnifiedDataLoader, featuring a real-time dashboard to monitor synchronized kinematics and observations.

Unified VLA Training Framework | Core Developer

June 2025

- **Config-Centric Modular Architecture:** Decoupled core components (Models, Controllers, Evaluation) to seamlessly orchestrate the end-to-end lifecycle of mainstream VLA models (e.g., OpenVLA, π series, villa-X).
- **Automated Tracking & Alerting:** Standardized Runner/Trainer interfaces and integrated real-time notifications for cluster job states (queueing, preemption, failure), drastically reducing integration overhead.

ROBOCON Vision Localization | Tech Lead

National Champion | July 2021

- **Vision Lead & Sensor Fusion:** Directed the core perception system crucial for our **National Championship**. Fused LiDAR and depth cameras to pinpoint target cylinders with **1mm precision**.
- **High-Speed Target Tracking:** Combined YOLO and optical flow to track fast-moving arrows. Accurately predicted their flight trajectories and landing coordinates in real time, enabling precise automated scoring.

UniParse Document Parsing Platform | Core Developer

Apr. 2023

- **Modular Extraction Pipeline:** Architected an enterprise-grade parsing framework integrating customized OCR, text extraction, and advanced table recognition algorithms to robustly structure heterogeneous documents (PDF, Word, PPT, JPG).
- **SOTA Parsing Accuracy:** Outperformed leading open-source models (e.g., MinerU, GOT-OCR2.0) by reducing edit distance by **60%** across complex text blocks, multi-scale tables, and reading order reconstruction.

Honors & Awards

National Champion, ROBOCON (National Undergraduate Robotics Competition)

July 2021

 News ·  Code ·  Certificate | *Winning team among 60+ universities nationwide*

Third Prize, China Graduate Mathematical Modeling Competition

Dec. 2023

 Certificate | *Recognized for advanced statistical modeling among 19,898 graduate teams*

Meritorious Winner (H-Prize), Mathematical Contest in Modeling (MCM)

2021

Provincial Second Prize, China Undergraduate Mathematical Modeling

2021

Academic Scholarships & Merit Student, Wuhan University

2020 – 2023

Multiple-time recipient of university academic scholarships, Merit Student, and Outstanding Student awards.

Skills & Profile

-  **Profile & Focus:** Systems for AI (AI Infra), Research Engineering, Open-Source Contributor
-  **Tech Stack:** Python, C/C++, Linux, Docker, FastAPI, Azure Blob, vLLM, Distributed Training
-  **AI & Robotics:** PyTorch, ROS, OpenCV, Reinforcement Learning, Diffusion, VLA Models
-  **Languages:** Chinese (Native), English (Proficient / CET-6)