Zhe Li

PhD Student, MARS Lab · Nanyang Technological University, Singapore
keycharon0122@gmail.com | +86 199 7486 3980
Homepage | Google Scholar | GitHub

RESEARCH SUMMARY

Humanoid robot learning, focused on whole-body humanoid loco-manipulation and agentic. 9 first-author papers at CVPR / ICLR / ECCV / CoRL / ACM MM / IEEE TIP, including a CVPR 2026 Highlight (top 2.98%).

EDUCATION

Nanyang Technological University, Singapore 08/2026 – present
PhD in Robotics, School of Mechanical and Aerospace Engineering · Advisor: Prof. Jianfei Yang (MARS Lab)

Huazhong University of Science and Technology 09/2022 – 06/2025
M.S. in Computer Science and Technology · Advisor: Prof. Laurence T. Yang

Hunan University 09/2017 – 07/2021
B.S. in Biotechnology

SELECTED PUBLICATIONS (first author, 9 accepted)

- **Zhe Li**, Cheng Chi, Yangyang Wei, Boan Zhu, Tao Huang, Zhenguo Sun, Yibo Peng, Pengwei Wang, Zhongyuan Wang, Fangzhou Liu, Chang Xu, Shanghang Zhang. *"Do You Have Freestyle? Expressive Humanoid Locomotion via Audio Control".* **CVPR 2026 (Highlight, top 2.98%)**
- **Zhe Li**, Cheng Chi, Boan Zhu, Yangyang Wei, Shuanghao Bai, Yuheng Ji, Yibo Peng, Tao Huang, Pengwei Wang, Zhongyuan Wang, S.-H. Gary Chan, Chang Xu, Shanghang Zhang. *"RoboMirror: Understand Before You Imitate for Video to Humanoid Locomotion".* **ECCV 2026**
- **Zhe Li**, Cheng Chi, Yangyang Wei, Boan Zhu, Yibo Peng, Tao Huang, Pengwei Wang, Zhongyuan Wang, Shanghang Zhang, Chang Xu. *"From Language to Locomotion: Retargeting-free Humanoid Control via Motion Latent Guidance".* **ICLR 2026**
- **Zhe Li**, Yangyang Wei, Xichen Yuan, Zhenzhe Zhang, Shanghang Zhang, Jianfei Yang. *"RoboDreamer: Anticipatory Humanoid Locomotion with Predictive State-Space Models".* **CoRL 2026**
- **Zhe Li**, Weihao Yuan, Yisheng He, Lingteng Qiu, Shenhao Zhu, Zilong Dong, Laurence T. Yang. *"LaMP: Language-Motion Pretraining for Motion Generation, Retrieval, and Captioning".* **ICLR 2025**
- **Zhe Li**, Yisheng He, Lei Zhong, Weichao Shen, Qi Zuo, Lingteng Qiu, Zilong Dong, Laurence T. Yang, Weihao Yuan. *"MulSMo: Multimodal Stylized Motion Generation by Bidirectional Control Flow".* **IEEE TIP**
- **Zhe Li**, Zhangyang Gao, Cheng Tan, Stan Z. Li, Laurence T. Yang. *"General Point Model with Autoencoding and Autoregressive".* **CVPR 2024 (Top-Ten Paper Award, HUST)**
- **Zhe Li**, Laurence T. Yang, Bocheng Ren, Xin Nie, Zhangyang Gao, Cheng Tan, Stan Z. Li. *"MLIP: Enhancing Medical Visual Representation with Divergence Encoder and Knowledge-guided Contrastive Learning".* **CVPR 2024**
- **Zhe Li**, Laurence T. Yang, Xin Nie, Bocheng Ren, Xianjun Deng. *"Enhancing Sentence Representation with Visually-supervised Multimodal Pre-training".* **ACM MM 2023**

CO-AUTHORED PUBLICATIONS

- Shuanghao Bai, Wenxuan Song, Jiayi Chen, Yuheng Ji, Zhide Zhong, Jin Yang, Han Zhao, Wanqi Zhou, Wei Zhao, **Zhe Li**, Pengxiang Ding, Cheng Chi, Haoang Li, Chang Xu, Xiaolong Zheng, Donglin Wang, Shanghang Zhang, Badong Chen. *"Towards a Unified Understanding of Robot Manipulation: A Comprehensive Survey".* **IEEE T-RO (Equal Contribution)**
- Xin Nie, Laurence T. Yang, **Zhe Li**, Fulan Fan, Zecan Yang. *"Tensor-empowered Incomplete Multimodal Learning with Modality Reconstruction for Edge Intelligence".* **ACM TOMM**
- Xin Nie, Laurence T. Yang, **Zhe Li**, Xianjun Deng, Fulan Fan, Zecan Yang. *"Interpretable Multimodal Tucker Fusion Model with Information Filtering for Multimodal Sentiment Analysis".* **IEEE TCSS**
- Zheng Wang, Laurence T. Yang, Bocheng Ren, Jinglin Zhao, **Zhe Li**, Guolei Zeng. *"Capturing Detail Variations for Lightweight Neural Radiance Fields".* **ICASSP 2024**
- Jinglin Zhao, Debin Liu, Laurence T. Yang, Ruonan Zhao, Zheng Wang, **Zhe Li**. *"TD3D: Tensor-based Discrete Diffusion Process for 3D Shape Generation".* **ICME 2024**

PREPRINTS & UNDER REVIEW

- **Zhe Li**, Zhenzhe Zhang, Yangyang Wei, Wenjie Zhang, Xichen Yuan, Peiyuan Zhi, Gen Li, Xinying Guo, Fengjie Gao, Jianfei Yang, Shanghang Zhang. *"ω-0: A Latent Predictive World Action Model for Concurrent Humanoid Loco-Manipulation".* **Under Review (Project Lead)**

- **Zhe Li**, Weihao Yuan, Weichao Shen, Siyu Zhu, Zilong Dong, Chang Xu. *"OmniMoGen: Multimodal Motion Generation with Continuous Masked Autoregression".* **Under Review**
- Xichen Yuan, **Zhe Li**, Bofan Lyu, Kuangji Zuo, Yanshuo Lu, Gen Li, Jianfei Yang. *"RoboForge: Physically Optimized Text-guided Whole-body Locomotion for Humanoids".* **Under Review** **(Equal Contribution and Project Lead)**
- **Zhe Li**, Jinglin Zhao, Zheng Wang, Debin Liu, Bocheng Ren, Laurence T. Yang. *"Mitigating Prior Shape Bias in Point Clouds with Differentiable Center Learning".* **Under Review**

RESEARCH EXPERIENCE

Beijing Academy of Artificial Intelligence (BAAI) 2025 – 2026
Research Intern · Embodied AI, with Prof. Shanghang Zhang

- Led the ω-0 project as Project Lead, coordinating collaborators across NTU, Peking University, BAAI and HKUST(GZ) over data collection, model training and real-robot evaluation.
- Built ω-HOME: 40.3 h, 4,827 trajectories, 24 household tasks with synchronized egocentric RGB, exocentric RGB-D, whole-body SMPL motion, robot states and action latents.
- Contributed to the RoboBrain model series for embodied manipulation.

Tongyi Lab, Alibaba Group 07/2024 – 06/2026
Research Intern · with Dr. Weihao Yuan

- Developed LaMP, a language-motion pretraining framework reaching state of the art on both motion-text retrieval and text-guided motion generation (ICLR 2025).
- Extended the line to stylized and multimodal motion generation (MulSMo, IEEE TIP; OmniMoGen, under review).

Westlake University 07/2023 – 11/2023
Research Intern · with Prof. Stan Z. Li

- Unified autoencoding and autoregressive objectives for 3D point cloud representation learning (CVPR 2024; HUST Top-Ten Paper Award).

SYSTEMS & ENGINEERING

- Real-robot deployment: language-, audio- and video-driven whole-body locomotion, and concurrent loco-manipulation, all deployed on a physical Unitree G1 humanoid.
- Whole-body VR teleoperation rig: Pico 4 Ultra headset, foot trackers, Inspire dexterous hands, ZED Mini egocentric and ZED exocentric depth cameras — single-operator synchronized capture.
- Sim-to-real pipeline across IsaacLab and MuJoCo, with cross-simulator validation before hardware deployment.

FUNDED PROJECTS

- Modelling Theory and System Design for Safety-Critical Cyber-Physical Systems (NSFC) — unified modelling of discrete computational and continuous physical dynamics in ACPS.
- Key Technologies of AI Foundation Models — self-supervised and weakly-supervised learning for cross-lingual and cross-modal representation.

AWARDS & HONOURS

- CVPR 2026 Highlight (top 2.98% of submissions) 2026
- National Scholarship for Graduate Students (top 1%) 2023, 2024
- Top-Ten Outstanding Papers Award, HUST (top 4.2%) 01/2024
- Tencent Scholarship (top 1%) 04/2024
- Outstanding Graduate Student Honour Scholarship (Rank 1) 10/2024
- Science and Technology Innovation Scholarship (Rank 1) 10/2024
- Outstanding Graduate Student Honour, HUST 09/2023

ACADEMIC SERVICE

Conference Reviewer CVPR, ICCV, ECCV, ICLR, AAAI, ACM MM

TECHNICAL SKILLS

Languages & Frameworks Python, C++, CUDA; PyTorch, DeepSpeed, Hugging Face, ROS

Simulation & Hardware IsaacLab / Isaac Sim, MuJoCo; Unitree G1, Inspire dexterous hands, Pico VR teleoperation, ZED / RealSense

Methods Diffusion & flow matching, vision-language-action models, reinforcement learning, whole-body control, motion generation