Changwei Jing

jcwsjtu417@gmail.com https://changwei-jing.github.io

Education

University of California, San Diego **Sep. 2024 – Present**
Master of Science in Computer Engineering *San Diego, California*

Shanghai Jiao Tong University **Sep. 2020 – Jun. 2024**
Bachelor of Science in Physics *Shanghai, China*

Research Interests

Embodied AI, Dexterous robotic manipulation, tactile-based multimodal sensing, reinforcement learning, Human robot interaction.

Publications

1. **Changwei Jing**, Jai Krishna Bandi, Jianglong Ye, Rocky Duan, Pieter Abbeel, Xiaolong Wang, Sha Yi, "Contact-Aware Neural Dynamics," *Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2026.
2. Jianglong Ye*, **Changwei Jing***, Kezhou Chen, Keyi Wang, Sha Yi, Xueyan Zou, Xiaolong Wang, "Switchable Neural Teleoperation," *International Conference on Robotics and Automation (**ICRA**)*, 2026. **[Paper]** **[Video]**
3. Kezhou Chen, **Changwei Jing***, Chengzhe Jia, Ge Yang, Sha Yi, Xiaolong Wang, "A Study of Dexterous Hand Degrees-of-Freedom for Teleoperation and Imitation Learning," *Submitted to ICRA*, 2026.
4. Jianglong Ye, Lai Wei, Guangqi Jiang, **Changwei Jing**, Xueyan Zou, Xiaolong Wang, "From Power to Precision: Learning Fine-grained Dexterity for Multi-fingered Robotic Hands," *arXiv preprint arXiv:2511.13710*, 2025. **[arXiv]**
5. Guangqi Jiang, Yutong Liang, Jianglong Ye, Jia Yang Huang, **Changwei Jing**, Rocky Duan, Pieter Abbeel, Xiaolong Wang, Xueyan Zou, "Cross-Hand Latent Representation for Vision-Language-Action Models," *Submitted to CVPR*, 2026.

Research Experiences

Shared-Autonomy System for Dexterous Teleoperation and Autonomous Grasping **San Diego, USA**
Advisor: Prof. Xiaolong Wang Apr 2025 – Jun 2025

- Designed a hybrid teleoperation framework that integrates human coarse control with autonomous dexterous grasping, addressing morphology gaps, latency, and perceptual limitations in traditional teleoperation.
- Trained a point-cloud–conditioned CVAE grasping policy and a neural switching module that predicts when to transition from human guidance to autonomous execution for reliable shared autonomy.
- Built an end-to-end perception and control pipeline, including 3D segmentation, point cloud reconstruction, hand–robot retargeting, and real-time IK optimization for adaptive dexterous manipulation.
- Validated the system on real robots across six manipulation tasks, achieving higher task success and 2–3× faster demonstration collection compared to state-of-the-art teleoperation methods.

Contact-Aware Neural Dynamics for Sim-to-Real Manipulation San Diego, USA
Advisor: Prof. Xiaolong Wang Jun 2025 – Nov 2025

- Developed a contact-aware neural dynamics framework that implicitly aligns simulated and real-world manipulation dynamics using tactile-informed forward models.
- Trained a multimodal dynamics model integrating object pose histories, robot actions, point-cloud geometry, and binary contact signals to predict contact-driven object motion.
- Designed a two-stage architecture with a contact prediction module and a diffusion-based pose predictor, improving long-horizon physical realism and temporal consistency.
- Achieved strong sim-to-real transfer with significantly lower prediction error and higher ADD-S accuracy across single-object and multi-object manipulation tasks.