

YUTONG LIANG

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Education

University of California, San Diego

M.S. in Computer Science and Engineering · Advisor: **Prof. Xiaolong Wang**

Sep 2025–Dec 2026 (expected)

CA, USA

Peking University

B.S. in Computer Science and Technology · Advisor: **Prof. Libin Liu**

Sep 2021–Jul 2025

Beijing, China

GPA: 3.75/4.0 · Rank: 7/121

Research Interests

I build real-world learning systems for contact-rich dexterous manipulation. My work captures fine-grained human hand-object interaction, uses human demonstrations as motion and exploration priors for reinforcement learning, and learns precise contact from teleoperated robot data. My long-term goal is to build a general model for contact-aware, low-level robot control.

Publications

FINGR: Learning Dexterous Hand Control for Real-World Rubik's Cube Solving

Yutong Liang*, Quanquan Peng*, Matthew Kim*, Xiaolong Wang

Under review · arXiv:2609.33973

FACT: Failure-Aware Causal Training for World-Action Models

Quanquan Peng*, **Yutong Liang***, Rui Yan, Nicklas Hansen, Xiaolong Wang

CoRL 2026

ConTrack: Constrained Hand Motion Tracking with Adaptive Trade-Off Control

Yutong Liang, Quanquan Peng, Ri-Zhao Qiu, Xiaolong Wang

ECCV 2026

XL-VLA: Cross-Hand Latent Representation for Vision-Language-Action Models

Guangqi Jiang*, **Yutong Liang***, Jianglong Ye, Jia-Yang Huang, Changwei Jing, Rocky Duan, Pieter Abbeel,

Xiaolong Wang, Xueyan Zou

CVPR 2026 (Highlight)

DexterCap: Affordable and Automated Capture of Complex Hand-Object Interactions

Yutong Liang*, Shiyi Xu*, Yulong Zhang*, Bowen Zhan, He Zhang, Libin Liu

Eurographics 2026

GSWorld: Closed-Loop Photo-Realistic Simulation Suite for Robotic Manipulation

Guangqi Jiang*, Haoran Chang*, Ri-Zhao Qiu, **Yutong Liang**, Mazeyu Ji, Jiyue Zhu, Zhao Dong, Xueyan Zou,

Xiaolong Wang

ICRA 2026

RoboVerse: A Unified Platform, Benchmark and Dataset for Scalable and Generalizable Robot Learning

Haoran Geng, ..., **Yutong Liang**, ..., Jitendra Malik, Pieter Abbeel

RSS 2025

SimiSketch: Efficiently Estimating Similarity of Streaming Multisets

Fenghao Dong, Yang He*, **Yutong Liang***, Zirui Liu, Yuhan Wu, Peiqing Chen, Tong Yang

arXiv preprint 2024

*Equal contribution.

Research Experience

University of California, San Diego

Jul 2025–Present

Advisor: [Prof. Xiaolong Wang](#)

FINGR

First author · Under review

Learned Rubik's Cube layer turns from teleoperated demonstrations on a real dexterous hand with a contact-aware policy. Raised turn success from 79.7% to **99.0%** over 300 attempts; the full system solved **10/10** scrambled $2 \times 2 \times 2$ cubes autonomously in 137 s on average.

ConTrack

First author · ECCV 2026

Turned human hand-object demonstrations into robot motion by tracking the object as a constraint and letting the robot hand deviate from the human hand. Tracked **90%** of each clip on average against 74% for the strongest baseline under the same training budget, with the highest contact fidelity, across bimanual, articulated-object, and in-hand rotation clips; executed on a real bimanual xArm7–XHand platform.

XL-VLA

Co-first author · CVPR 2026 Highlight

Designed the latent action space shared across four dexterous hands, learned without demonstrations or paired cross-hand data. One policy trained on all four hands raised mean real-world success from 55% to **90%** over ten tasks against π_0 .

Peking University

Jul 2023–Jul 2025

Visual Computing and Learning Lab · Advisor: [Prof. Libin Liu](#)

DexterCap

First author · Eurographics 2026

Built the automated reconstruction pipeline of an optical capture system for in-hand manipulation with under **\$6,000** of hardware. Fits hand markers to 0.77 mm error (2.06 mm during dynamic manipulation) and produced the DexterHand dataset, with sequences over 10 minutes and objects up to an articulated Rubik's Cube.

Stanford University

Research Intern · Jun–Sep 2024

The Movement Lab and Stanford Vision and Learning Lab · Advisors: [Prof. C. Karen Liu](#) and [Prof. Jiajun Wu](#)

Motion-Guided Interior Design

Optimized indoor layouts with CMA-ES, scoring each layout by the human motion it supports through MuJoCo inverse dynamics.

Honors and Awards

PKU Scholarship (Top 5%); PKU Outstanding Research Award

2024

AEON Scholarship (Top 10%)

2023

Academic Service

Reviewer: ICRA 2027, CoRL 2026, IEEE RA-L 2026

Workshop reviewer: CoRL 2026 (Compositional Generalization for Real-World Robot Learning; Dexterous Manipulation), ICRA 2026 (Manipulation Robustness)