Binghao Huang

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Education

Columbia University — *New York, NY*
Ph.D. student in Computer Science, Advisor: Prof. Yunzhu Li — Aug. 2024 - Now

University of Illinois Urbana-Champaign — *Champaign, IL*
Ph.D. student in Computer Science, Advisor: Prof. Yunzhu Li — Aug. 2023 - 2024

University of California, San Diego — *San Diego, CA*
Master of Science in Mechanical and Aerospace Engineering, Advisor: Prof. Xiaolong Wang — Sep. 2021 - Mar. 2023

Zhejiang University of Technology — *Hangzhou, Zhejiang*
Bachelor of Engineering in Mechanical Engineering — Sep. 2015 - Jun. 2019

Publications

[1] **Binghao Huang**, Jie Xu, Iretiayo Akinola, Wei Yang, Balakumar Sundaralingam, Rowland O'Flaherty, Dieter Fox, Xiaolong Wang, Arsalan Mousavian, Yu-Wei Chao† and Yunzhu Li† " VT-Refine: Learning Bimanual Assembly with Visuo-Tactile Feedback via Simulation Fine-Tuning", [Project] [Paper]

[2] Xinyue Zhu*, **Binghao Huang*** and Yunzhu Li " Touch in the Wild: Learning Fine-Grained Manipulation with a Portable Visuo-Tactile Gripper", **Best Demo Award** at **RSS 2025** Workshop on [Robot Hardware-Aware Intelligence, [Project] [Paper]

[3] **Binghao Huang**, Yixuan Wang, Xinyi Yang, Yiyue Luo, and Yunzhu Li " 3D-ViTac: Learning Fine-Grained Manipulation with Visuo-Tactile Sensing" *Conference on Robot Learning (**CoRL**) 2024*, [Project] [Paper]

[4] Hanxiao Jiang, **Binghao Huang**, Ruihai Wu, Zhuoran Li, Shubham Garg, Hooshang Nayyeri, Shenlong Wang, and Yunzhu Li " RoboEXP: Action-Conditioned Scene Graph via Interactive Exploration for Robotic Manipulation" *Conference on Robot Learning (**CoRL**) 2024*, [Project] [Paper]

[5] Yixuan Wang, Yin Guang, **Binghao Huang**, Tarik Kelestemur, Jiuguang Wang, Yunzhu Li " GenDP: 3D Semantic Fields for Category-Level Generalizable Diffusion Policy" *Conference on Robot Learning (**CoRL**) 2024*, [Project] [Paper]

[6] Entong Su, Chengzhe Jia, Yuzhe Qin, Wenxuan Zhou, Annabella Macaluso, **Binghao Huang**, Xiaolong Wang " Sim2Real Manipulation on Unknown Objects with Tactile-based Reinforcement Learning" *International Conference on Robotics and Automation(**ICRA**) 2024*, [Project] [Paper]

[7] Ying Yuan*, Haichuan Che*, Yuzhe Qin*, **Binghao Huang**,Zhao-Heng Yin, Kang-Won Lee, Yi Wu, Soo-Chul Lim, Xiaolong Wang " Robot Synesthesia: In-Hand Manipulation with Visuotactile Sensing" *International Conference on Robotics and Automation(**ICRA**) 2024*, [Project] [Paper]

[8] **Binghao Huang***, Yuanpei Chen*, Tianyu Wang, Yuzhe Qin, Yaodong Yang, Nikolay Atanasov, Xiaolong Wang. "Dynamic Handover: Throw and Catch with Bimanual Hands" *Conference on Robot Learning (**CoRL**) 2023*, [Project] [Paper]

[9] Zhao-Heng Yin*, **Binghao Huang***, Yuzhe Qin , Qifeng Chen, Xiaolong Wang."Rotating without Seeing: Towards In-hand Dexterity through Touch" *Robotics: Science and Systems (**RSS**), 2023*, [Project] [Paper]

[10] Yuzhe Qin, Wei Yang, **Binghao Huang**, Karl Van Wyk, Hao Su, Xiaolong Wang, Yu-Wei Chao, Dieter Fox. "AnyTeleop: A General Vision-Based Dexterous Robot Arm-Hand Teleoperation System," *Robotics: Science and Systems (**RSS**), 2023*, [Project].

[11] Yuzhe Qin*, **Binghao Huang***, Zhao-Heng Yin , Hao Su, Xiaolong Wang."DexPoint: Generalizable Point Cloud Reinforcement Learning for Sim-to-Real Dexterous Manipulation" *Conference on Robot Learning (**CoRL**), 2022*, [Project] [Paper]

[12] Jianglong Ye*, Jiashun Wang*, **Binghao Huang**, Yuzhe Qin, Xiaolong Wang."Learning Continuous Grasping Function with a Dexterous Hand from Human Demonstrations" *IEEE Robotics and Automation Letters (**RA-L**), 2023*, [Project] [Paper]

Work Experience

Nvidia Seattle Robotics Lab *Seattle, WA*

Robotics Research Intern, Mentor: Yu-Wei Chao, Jie Xu, Iretiayo Akinola, Wei Yang, Xiaolong Wang, Arsalan Mousavian, Dieter Fox, Yashraj Narang May. 2023 - Now

- **Hardware**: Designed and built a mobile bimanual teleoperation system with integrated high-resolution tactile sensors for enhanced manipulation precision.
- **Tactile Simulation**: Developed high-resolution tactile sensor simulation to model normal force feedback for realistic interaction.
- **Learning**: Created a mobile bimanual platform with tactile feedback for data collection, supporting diffusion policy training. Leveraged simulation to improve robustness and generalization.

Services

Conference Reviewer

• Conference on Robot Learning (CoRL)
• Robotics: Science and Systems (RSS)
• International Conference on Learning Representations (ICLR)
• International Conference on Intelligent Robots and Systems (IROS)
• International Conference on Robotics and Automation (ICRA)

Journal Reviewer

• Transactions on Robotics (T-RO)
• IEEE Robotics and Automation Letters (RA-L)

Workshop Organizer

• Learning Dexterous Manipulation(Workshop at RSS 2023)[Link]
• 4th Workshop on Dexterous Manipulation (Workshop at CoRL 2025)[Link]

Talks

• Invited Speaker at Facebook AI Research (FAIR): In-hand dexterous manipulation with tactile information	May 2023
• Invited Speaker at NYC Computer Vision Day 2025: Learning Fine-Grained Manipulation with Visuo-Tactile Sensing.	Feb 2025
• Invited Speaker at UMD Multisensory Machine Intelligence Lab: What I Wish I Had for Visuo-Tactile Sensing	Apr 2025
• Invited Speaker at University of Washington, MechE: What I Wish I Had for Visuo-Tactile Sensing	Jun 2025
• Invited Speaker at Facebook AI Research (FAIR): Learning Visuo-Tactile Feedback via Simulation Fine-Tuning.	Jul 2025

Technical Skills

Programming	Matlab, C++, Python, PLC
Professional Softwares	Sapien, IsaacGym, Gazebo, Solidworks, AutoCAD, Ansys, Altium Designer, Blender
Drawing & Typesetting	Photoshop, Office, LaTeX, Premiere
Languages	Chinese(Native), English