# Zeyuan Chen

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#### Education

**Peking University** 

Master of Engineering in Software Engineering, School of Software and Microelectronics

#### Northwest Minzu University

Bachelor of Science in Biotechnology, School of Life Sciences and Engineering

#### **Publications**

## Adaptive Visual-Tactile Fusion with Predictive Force Attention for Dexterous Manipulation (Project Page)

Jinzhou Li\*, Tianhao Wu\*, Jiyao Zhang\*\*, **Zeyuan Chen**\*\*, Haotian Jin, Mingdong Wu, Yujun Shen, Yaodong Yang, Hao Dong *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025* **(Under Review)** 

## **Research Experience**

#### **Dexterous Grasping in Confined Environment**

Research Intern, Supervised by Prof. Hao Dong

• Overview: Extended DexGraspNet to generate dexterous grasps in confined environments, Proposed a diffusion-based hierarchical grasp generation network that first predicts wrist poses globally and then refines joint values based on local point cloud information.

#### Unified Grasp Representation for Dexterous Hand (In progress)

Research Intern, Supervised by Prof. Hao Dong

• Overview: Generated large-scale grasp pose datasets for multiple dexterous hands, using IBS planes as a unified representation. Proposed a hierarchical architecture to predict wrist poses and voxelized IBS, optimizing final grasps with a tuned energy function for robust grasping.

Adaptive Visual-Tactile Fusion with Predictive Force Attention for Dexterous Manipulation Nov. 2024 – Mar. 2025 Research Intern, Supervised by Prof. Hao Dong

• **Overview:** Proposed a novel **force-guided attention fusion module** to adaptively fuse visual and tactile information, supported by a **self-supervised force prediction module**. Achieved **93% success rate** in 3 real-world contact-rich tasks, demonstrating adaptive attention adjustment across multiple manipulation stages.

## General Dexterous Grasping Policy in Cluttered Environment (In progress)

Research Intern, Supervised by Prof. Hao Dong

• Overview: Trained a teacher policy in Isaac Gym for grasping in cluttered environments, distilled it into a vision-based policy, to achieve robust sim2real dynamic dexterous grasping for table-clearing tasks.

## Projects

## Dexterous Grasp Synthesis from Para-Gripper Grasps (Demo)

Research Intern, Supervised by Prof. Hao Dong

• Overview: Used AnyGrasp to generate para-gripper grasp candidates, mapped them to dexterous hand poses via hand-tuned transformations, and enabled table-clearing through motion planning and heuristic hand closing.

## Teleoperation System for Dexterous Hand Retargeting (Demo)

Research Intern, Supervised by Prof. Hao Dong

• Overview: Developed a teleoperation system integrating HaMeR and Intel RealSense D415 for hand tracking, with Dexpilot for retargeting, deployed on Leap Hand for dexterous task data collection.

Sep. 2023 – Present Beijing, China

Sep. 2019 – Jun. 2023 Lanzhou, China

Mar. 2024 – Sep. 2024

Sep. 2024 – Present

Oct. 2024 – Present

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Mar. 2024 – Apr. 2024

Mar. 2024 – Apr. 2024

## Internship Experience

PKU-Agibot Joint Lab

Beijing, China

## **Technical Skills**

Jul. 2024 - Present Research Intern

Programming Languages: Python, C/C++Languages: English (CET-6), Mandarin (native)Deep Learning Framework: PyTorchRobotics Frameworks: ROS, Isaac Gym, Isaac SimRobotics Hardware: Shadow Hand, Leap Hand, Inspire Hand, UR10e, Flexiv, Jaka, Realman, Franka, Realsense, Kinect

## Awards and ScholarShips

**National Scholarship** (¥ 8000)

Dec. 2021