

# Zeyuan Chen

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## Education

### Peking University

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

Sep. 2023 – Present

Beijing, China

### Northwest Minzu University

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

Sep. 2019 – Jun. 2023

Lanzhou, China

## 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**

Mar. 2024 – Sep. 2024

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)**

Sep. 2024 – Present

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)**

Oct. 2024 – Present

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)**

Mar. 2024 – Apr. 2024

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)**

Mar. 2024 – Apr. 2024

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**.

Internship Experience

<b>PKU-Agibot Joint Lab</b> <i>Beijing, China</i>	Jul. 2024 - Present <i>Research Intern</i>
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Technical Skills

<b>Programming Languages:</b> Python, C/C++	<b>Languages:</b> English (CET-6), Mandarin (native)
<b>Deep Learning Framework:</b> PyTorch	<b>Robotics Frameworks:</b> ROS, Isaac Gym, Isaac Sim
<b>Robotics Hardware:</b> Shadow Hand, Leap Hand, Inspire Hand, UR10e, Flexiv, Jaka, Realman, Franka	

Awards and Scholarships

<b>National Scholarship</b> (¥ 8000)	Dec. 2021
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