

Dehao Huang

🏠 red0orange.github.io | 🎓 [Google Scholar](https://scholar.google.com/citations?user=...) | 🌐 github.com/red0orange | ✉️ huangdehao919@gmail.com

Robotics and Computer Vision Lab, Dept. of Electronic and Electrical Engineering
Southern University of Science and Technology & Zhongguancun Academy, Shenzhen

RESEARCH INTERESTS

My research focuses on **robotic manipulation and grasping**. Currently, I am working on **Reinforcement Learning (RL) for Vision-Language-Action (VLA) models**, aiming to enable VLA models to interact autonomously with environments and achieve strong performance in both single-task and multi-task settings.

My research path has been progressive: during my Master's I worked on perception for robotic grasping; in my Ph.D. I explored RL for LLM agents—experiences that naturally converged into my current focus on RL for VLA, bridging perception and decision-making.

I aim to be an engineering-oriented researcher, dedicated to applying frontier technologies to solve practical problems.

EDUCATION

Zhongguancun Academy & SUSTech *Sept 2024 - Jun 2027 (Expected)*
Ph.D. Candidate in Robotics and Smart Manufacturing
Advisor: [Prof. Hong Zhang](#) and [Prof. Yue Wang](#)

Southern University of Science and Technology (SUSTech) *Aug 2022 - Jun 2024*
M.S. in Electronic Science and Technology
Advisor: [Prof. Hong Zhang](#)

South China Normal University *Aug 2018 - Jun 2022*
B.E. in Engineering in Information Engineering, GPA: 3.86/5.0

OPEN SOURCE CONTRIBUTIONS

- **RLinf** — Contributed to the development of RLinf, a VLA RL infrastructure framework for training and evaluating Vision-Language-Action models with reinforcement learning.
- **AlohaMini** — Contributed to the development of AlohaMini, an open-source low-cost mobile manipulation platform for robotics research and education.

PUBLICATIONS

- [1] **Huang, Dehao**, Wenlong Dong, Chao Tang, and Hong Zhang. "HGDiffuser: Efficient Task-Oriented Grasp Generation via Human-Guided Grasp Diffusion Models." *Accepted by IEEE/RSSJ International Conference on Intelligent Robots and Systems (IROS)*, 2025.
[\[Paper\]](#) [\[Video\]](#) [\[Code\]](#)
- [2] **Huang, Dehao**, Chao Tang, and Hong Zhang. "Efficient Object Rearrangement via Multi-view Fusion." *Accepted by International Conference on Robotics and Automation (ICRA)*, 2024.
[\[Paper\]](#) [\[Video\]](#)
- [3] Tang, Chao, **Dehao Huang**, Wenlong Dong, Ruinian Xu, and Hong Zhang. "Foundationgrasp: Generalizable task-oriented grasping with foundation models." *Accepted by IEEE Transactions on Automation Science and Engineering*, 2025.
[\[Paper\]](#) [\[Video\]](#)
- [4] Tang, Chao, **Dehao Huang**, Wenqi Ge, Weiyu Liu, and Hong Zhang. "Graspgpt: Leveraging semantic knowledge from a large language model for task-oriented grasping." *Accepted by IEEE Robotics and Automation Letters*, 2023.
[\[Paper\]](#) [\[Video\]](#)
- [5] Shao, Chenyang, **Dehao Huang**, Yu Li, Keyu Zhao, Weiquan Lin, Yining Zhang, Qingbin Zeng et al. "OmniScientist: Toward a Co-evolving Ecosystem of Human and AI Scientists." *arXiv*, 2025.
[\[Paper\]](#)
- [6] Tang, Chao, **Dehao Huang**, Lingxiao Meng, Weiyu Liu, and Hong Zhang. "Task-Oriented Grasp Prediction with Visual-Language Inputs." *Accepted by International Conference on Intelligent Robots and Systems (IROS)*, 2023.
[\[Paper\]](#) [\[Video\]](#)
- [7] Chen, Weinan, **Dehao Huang**, Yaling Pan, Guangcheng Chen, Jiahao Ruan, Jingwen Yu, Jiamin Zheng, and Hong Zhang. "Cloud Learning-based Meets Edge Model-based: Robots Don't Need to Build All the Submaps dItself." *Accepted by IEEE Transactions on Vehicular Technology*, 2023.
[\[Paper\]](#) [\[Video\]](#)

- [8] **Huang, Dehao**, Jintao Cheng, Rui Fan, Zhihao Su, Qiongxiang Ma, and Jie Li. "Bone marrow cell recognition: Training deep object detection with a new loss function." *Accepted by IEEE International Conference on Imaging Systems and Techniques (IST)*, 2021.
[Paper]
- [9] Guo, Liang, Peiduo Huang, **Dehao Huang**, Zilan Li, Chenglong She, Qianhang Guo, Qingmao Zhang, Jiaming Li, Qiongxiang Ma, and Jie Li. "A classification method to classify bone marrow cells with class imbalance problem." *Accepted by Biomedical Signal Processing and Control*, 2022.
[Paper]

COMPETITIONS

RoboMaster Robotics Competition

Algorithm Group Leader

Sep 2019 – Sep 2021
PIONEER Team & SCNU

- Enhanced Armor Recognition: Improved recall and accuracy using channel fusion, flood fill methods, and a neural network for anomaly detection in digital recognition.
- 3D Positioning with Monocular Vision: Calibrated internal and external parameters of a monocular camera, utilizing the PnP solution for precise gimbal control.
- ROS-Based Debugging Framework: Developed a program framework with custom RQT tools and a parameter debugging interface via the ROS parameter server.
- Robot Localization with AprilTag: Implemented precise localization and trajectory control using AprilTag and PID control.

National College Students' Smart Car Competition

Team Leader

July 2020 – Aug 2020
PIONEER Team & SCNU

- Ackerman Motion Model Optimization: Enhanced steering angular velocity accuracy by integrating IMU attitude information into a closed-loop control system.
- Positioning Accuracy Improvement: Utilized an Extended Kalman Filter to fuse odometer and IMU data, significantly improving positioning accuracy.

SELECTED AWARDS AND HONORS

- The 1st Academic Research Star of Zhongguancun Academy *2026*
- RoboMaster National Second Prize *2020*
- American Interdisciplinary Contest in Modeling (ICM) Meritorious Winner *2021*
- SCNU First-Class Scholarship *2020*
- National Undergraduate Smart Car Competition Third Prize *2020*

SKILLS

- **Programming:** Python, C/C++.
- **Software & Tools:** RLinf, LeRobot, PyTorch, ROS, Git, L^AT_EX.
- **Languages:** Chinese: Native. English: CET-6.