

# XIANGLEI DONG

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## EDUCATION

**Beijing University of Chemical Technology, B.Eng. in Mechanical Engineering** Sep. 2022 - Present  
*Coursework: Signals and Systems, Basic Theory of Mechanical Design* 3.58/4.33

## EXPERIENCE

**Hardware and Software Engineer** Jun. 2024 - Jul. 2024  
*STATE GRID INTELLIGENCE TECHNOLOGY CO.,LTD* Jinan, China

- Independently responsible for the design and implementation of the hardware and software architecture for robotic projects, including system integration, sensor calibration, and actuator control.
- Successfully integrated multiple modules within the project, including real-time operating systems (RTOS), communication protocols (based on ROS and RTThread), and embedded systems, enabling efficient task execution and seamless interaction between modules.
- Demonstrated excellent project management and problem-solving skills by addressing complex hardware-software integration challenges during testing and deployment.

## PROJECTS

*\*: Equal Contribution*

**RViz Plugin for Multi-Point Navigation** Sep. 2024 - Dec. 2024  
*Xianglei Dong*

- Developed a plugin for RViz within the ROS system to enhance the robot's navigation capabilities.
- Enabled multi-point navigation for robots, significantly reducing the need for manual input of coordinate points in RViz.
- Contributed to the improvement of robot path planning and navigation efficiency.

**Reproducing and Training the ACT Neural Network from the LeRobot Project** Nov. 2024 - Dec. 2024  
*Jiawei Xia\*, Xianglei Dong\**

- The robotic arm was 3D printed and physically assembled to achieve a fully functional prototype.
- Trained a custom dataset to enable the robotic arm to autonomously organize a desktop environment.

**Developed an intelligent home service robot based on ROS** Feb. 2024 - May. 2024  
*Jiawei Xia, Xianglei Dong, Wengcong Zhang, Boyi Zhang, Yutong Sun*

- Developed an intelligent home service robot using Kinova Gen2 and Kinect Azure camera.
- The robot's functions include guest reception and guidance, voice interaction, object recognition, and room cleaning.
- Integrated Azure AI Speech SDK for speech recognition and output, implementing simple human-robot voice interaction through a finite state machine.
- Incorporated YOLOv5 and Kinect DK for object recognition, used Cartographer for 2D indoor mapping, employed IRIS LaMa for robot localization, and implemented local path planning using DWA and global path planning using A\*.

## AWARDS

**2024 robocup@home China National** Quanzhou, Fujian  
*Second Price* May. 2024

**ICAN International Contest of innovAtioN** Beijing, China  
*Second Price* Nov. 2024

## SKILL

**Operating System:** Windows, linux  
**Programming Framework:** Python, C/C++  
**Software:** SolidWorks, AutoCAD, ROS, STM32