

# Zhijie Yan

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## EDUCATION

### Master in Mechanical Engineering, Beihang University

Supervisor: **Prof. Zuoxu Wang**

- Rank: **1 / 186**

Beijing, China

Sept 2023 – Jun 2026

### Software Engineering, Jiangxi University of Finance and Economics

Supervisor: **Dr. Jifu Chen**

- GPA: **93.48 / 100**, Rank: **5 / 436**

Jiangxi, China

Sept 2019 – Jun 2023

## RESEARCH INTEREST

My long-term research goal is to develop intelligent **Mobile Manipulation** systems that autonomously perform household tasks in dynamic indoor environments, with a focus on robust perception, motion planning, and safe interaction.

- **Dynamic 3D Scene Representation:** Real-time updating of **3D Scene Graphs** in **dynamic environments**.
- **Whole-body Control:** Robust and safe **mobile manipulation** for efficient task completion in everyday environments.
- **Imitation Learning:** Let robots become familiar with **various skills** in life.

## PUBLICATIONS ( <sup>†</sup> DENOTES CORRESPONDING AUTHOR.)

### JOURNAL ARTICLES

#### Dynamic Open-Vocabulary 3D Scene Graphs for Long-term Language-Guided Mobile Manipulation

**Zhijie Yan**, Shufei Li, Zuoxu Wang<sup>†</sup>, Lixiu Wu, Han Wang, Jun Zhu, Lijiang Chen, Jihong Liu

*IEEE Robotics and Automation Letters (RA-L, JCR-Q1, IF: 5.3), 2025*

#### DREAM: Dynamic Resilient Spatio-Semantic Memory with Hybrid Localization for Mobile Manipulation

**Zhijie Yan**, Shufei Li, Ze Zhang, Xin Liu, Yuhang Zheng, Zuoxu Wang<sup>†</sup>

*IROS 2025 HRII Workshop (Best Paper Award), 2025; IEEE/ASME Transactions on Mechatronics (Under Review)*

#### IndVisSGG: VLM-based scene graph generation for industrial spatial intelligence

Zuoxu Wang, **Zhijie Yan**, Shufei Li<sup>†</sup>, Jihong Liu

*Advanced Engineering Informatics (ADVEI, JCR-Q1, IF: 9.9), 2025*

#### VLM-MSGraph: Vision Language Model-enabled Multi-hierarchical Scene Graph for robotic assembly

Shufei Li, **Zhijie Yan**, Zuoxu Wang<sup>†</sup>, Yiping Gao

*Robotics and Computer-Integrated Manufacturing (RCIM, JCR-Q1, IF: 11.4), 2025*

### CONFERENCE PAPERS

#### INT2: Interactive Trajectory Prediction at Intersections

**Zhijie Yan**, Pengfei Li, Zheng Fu, Shaocong Xu, Yongliang Shi, Xiaoxue Chen, Yuhang Zheng, Yang Li, Tianyu Liu, Chuxuan Li, Nairui Luo, Xu Gao, Yilun Chen, Zuoxu Wang, Yifeng Shi, Pengfei Huang, Zhengxiao Han, Jirui Yuan, Jiangtao Gong, Guyue Zhou, Hang Zhao, Hao Zhao<sup>†</sup>

*International Conference on Computer Vision (ICCV), 2023*

#### ManufVisSGG: A Vision-Language-Model Approach for Cognitive Scene Graph Generation in Manufacturing Systems

**Zhijie Yan**, Zuoxu Wang<sup>†</sup>, Shufei Li, Mingrui Li, Xinxin Liang, Jihong Liu

*International Conference on Automation Science and Engineering (CASE), 2024*

#### Long-term Interactive Driving Simulation: MPC to the Rescue

Zhengxiao Han, **Zhijie Yan**, Yang Li, Pengfei Li, Yifeng Shi, Nairui Luo, Xu Gao, Yongliang Shi, Pengfei Huang, Jiangtao Gong, Guyue Zhou, Yilun Chen, Hang Zhao, Hao Zhao<sup>†</sup>

*CAAI International Conference on Artificial Intelligence (CICAI), 2023*

### Large Language Models Powered Context-aware Motion Prediction

Xiaoji Zheng, Lixiu Wu, **Zhijie Yan**, Yuanrong Tang, Hao Zhao, Chen Zhong, Bokui Chen, Jiangtao Gong<sup>†</sup>  
*International Conference on Intelligent Robots and Systems (IROS), 2024*

### TOD3Cap: Towards 3D Dense Captioning in Outdoor Scenes

Bu Jin, Yupeng Zheng<sup>†</sup>, Pengfei Li, Weize Li, Yuhang Zheng, Sujie Hu, Xinyu Liu, Jinwei Zhu, **Zhijie Yan**, Haiyang Sun, Kun Zhan, Peng Jia, Xiaoxiao Long, Yilun Chen, Hao Zhao  
*European Conference on Computer Vision (ECCV), 2024*

## INTERNSHIP EXPERIENCE

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Feb 2025 – July 2025: Research Intern, Reinforcement Learning Group, **NoetixRobotics**, Beijing, China

Jul 2022 – Nov 2023: Research Intern, DISCOVER LAB, AIR, **Tsinghua University**, Beijing, China

## AWARDS

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### National Scholarship

National-level scholarship, 2025

### Best Paper Award at IROS 2025 HRII Workshop

International-level scholarship, 2025

### First Prize Scholarship for Graduate Students (1/186)

School-level scholarship, 2025

### China College Students' Self-Reliance Star

National-level scholarship, 2022

### The Second Prize of the 23rd China Robot and Artificial Intelligence Competition

Ministry of Education national-level competition award, 2021

### The Second Prize of the 14th China College Students' Computer Design Competition

Ministry of Education national-level competition award, 2021

## SKILLS

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**PROGRAMMING :** Python / C++ / Java, Web (JavaScript, HTML/CSS), ROS/ROS2

**TOOLS :** PowerPoint, Ubuntu, Vscode, SolidWorks, Genesis, Isaac sim, Mujoco, Isaacgym