

# BOWEN YANG

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## EDUCATION

### Shanghai Jiao Tong University (SJTU)

*Bachelor of Engineering, Bachelor of Arts in French Studies*

Graduating Expected June 2027

SJTUParisTech Elite Institute of Technology

GPA: **3.98/4.30**; Rank: **5/81**

Advisor: Research Advisor: **Prof. Junchi Yan**

## RESEARCH EXPERIENCE

### Representation Matters: Vision–Language–Action Alignment for Robotics

*Research Assistant, RethinkLab, SJTU*

Sep 2025 – Present

Advisors: **Prof. Junchi Yan, Asst. Prof. Xiaosong Jia**

- Investigate **representation misalignment** between action tokens and vision–language perception embeddings in VLA models, characterizing how latent structures influence task performance.
- Develop an **external feature distillation** framework that aligns action and perception representations by injecting structured priors into the latent space, yielding more mechanism interpretability.
- Manuscript in preparation for **Robotics: Science and Systems (RSS) 2026**.

## ROBOTICS & SYSTEMS EXPERIENCE

### RoboMaster University Championship (National Champion, 2024 & 2025)

*Vice-Captain & Algorithm Lead, Team Jiao Loong*

Oct 2023 – Aug 2025

- Led development of a **LiDAR–inertial SLAM pipeline** (Fast-LIO2 based) with GICP map registration and fully PTP-synchronized LiDAR timing to improve robustness under fast robot motion.
- Built a **motion planning system** combining **kinodynamic A\*** and **MPC** and achieve low-latency tracking on embedded platforms under real-world competition constraints.
- Deployed **TensorRT-accelerated YOLO** on **Jetson Orin** and integrated an **EKF-based motion prediction** module for reliable enemy-state estimation under occlusion and high-speed dynamics.
- Received the **RM Award (Algorithm)** for contributions to SLAM and navigation of the Robot Sentry.

## AWARDS AND HONORS

- National Scholarship** 2025  
Ministry of Education of China. Awarded to top 0.2% students nationwide.
- National Scholarship** 2024  
Ministry of Education of China. Awarded to top 0.2% students nationwide.
- National Champion**, RoboMaster University Championship 2025  
Core algorithm design and leadership in SLAM/navigation system development.
- National Champion**, RoboMaster University Championship 2024  
Contributed to perception, planning, and embedded systems engineering.
- RM Award (Algorithm)**, RoboMaster University Championship 2025  
Individual recognition for SLAM and navigation system development.
- Finalist (Top 2%)**, Mathematical Contest in Modeling (MCM) 2025  
Problem B (Discrete).
- NOI Winter Camp Bronze; USACO Platinum Division** 2020–2021  
Advanced algorithm training in competitive programming.

## TECHNICAL SKILLS

**Programming:** Python, C++, C, Java

**Frameworks & Tools:** PyTorch, TensorFlow, ROS/ROS2, OpenCV, TensorRT, Docker, Git, L<sup>A</sup>T<sub>E</sub>X

**Robotics & Systems:** SLAM, Motion Planning, Sensor Fusion, Jetson / NUC, Sensor Calibration

**Languages:** Mandarin (Native), English (Fluent), French (Professional), Cantonese (Conversational)