Yang Wang

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Education

College of Artificial Intelligence, Nankai University Since Sep. 2021
Integrated Master's and Ph.D. Program in Control Science & Engineering, Rank: 3rd/29

College of Artificial Intelligence, Nankai University Sep. 2017 – Jun. 2021
Bachelor student in Automation, Rank: 2nd/39

Project Experience

Dual-Arm Aerial Manipulator Platform and Motion Control

- Designed the dual-arm mechanism and tuned Dynamixel servomotors
- Configured Pixhawk, onboard computer, ROS/MAVROS, and motion-capture pipeline
- Implemented joint trajectory tracking and robust flight control with **disturbance observer**

RL-Based Physical Interaction Simulation for Dual-Arm Aerial Manipulators

- Imported the USD model and configured rotors, arm joints, and collision detection
- Designed interaction tasks, observation/action spaces, and reward functions for RL training
- Trained and evaluated policies for **compliant interaction** with the environment

Selected Publications

- Learning-Based Adaptive Optimal Control for Dual-Arm Unmanned Aerial Manipulator Systems Catching Unknown Objects With Safety Constraints, *IEEE/ASME Transactions on Mechatronics*, 2026. **First Author, SCI Q1**
- Neural Network-Based Adaptive Event-Triggered Control for Dual-Arm Unmanned Aerial Manipulator Systems, *IFAC World Congress*, 2026. **First Author, EI, Triennial Top Int. Conf. in Control**
- Observer-Based Nonlinear Control for Dual-Arm Aerial Manipulator Systems Suffering From Uncertain Center of Mass, *IEEE Transactions on Automation Science and Engineering*, 2025. **Student First Author, SCI Q2**
- Super-Twisting Sliding Mode Based Nonlinear Control for Dual-Arm Unmanned Aerial Manipulator Systems, *IEEE International Conference on Unmanned Systems (ICUS)*, 2023. **First Author, EI Conference**
- Nonlinear Control for Dual-Rope Aerial Transportation System by Tilt-Rotor, *IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2021. **First Author, EI Conference**
- Cooperative Control for Underactuated Aerial Transportation Systems via the Energy-Based Analysis, *Control Theory & Applications*, 2020. **Student First Author, EI, Core Journal in Control**

Awards and Honors

- *1st Prize*, AI & Robotics Creative Design Competition, Five Northern Provinces Nov. 2024
- *1st Prize*, Tianjin IP Innovation & Entrepreneurship Competition - Invention & Design Track Dec. 2024
- *1st Place*, Future Cup AI Challenge - Image Track, North China Region Nov. 2020
- Outstanding Student Party Member, Nankai University 2024 – 2025
- Outstanding Student Cadre, Nankai University 2023 – 2024
- Outstanding Graduate Student & *First-Class* Gongneng Scholarship & Special Scholarship 2021 – 2022

Student Leadership

- **Party Branch Secretary**, Ph.D. Student Branch, College of AI 2023 – Present
- **Founder and First President**, Aeromodelling Association Oct. 2022
- **President**, Graduate Student Union, IRAIS, Nankai University 2021 – 2022

Skills

- Programming: Python, MATLAB, and C++
- Robotics: ROS/MAVROS, Isaac Sim, Robot Control, and Reinforcement Learning