



Hai Yu

Ph.D. Candidate (Expected 2026), Nankai University
Young Talent Support Project (PhD Program), CAST

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Education

Undergraduate-Master-Ph.D. all at “Double First-Class” universities

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| Nankai University | Integrated M.S.-Ph.D. in Control Science and Engineering | Sep 2020 - Present |
| • Research Focus: Nonlinear control for intelligent robots, underactuated robots, and UAVs | Advisors: Assoc. Prof. Xiao Liang | |
| Jilin University | B.Eng. in Automation | Sep 2016 - Jun 2020 |
| • Class Rank: 5/149 | Graduate Admission by Recommendation | |

Project Experience Selected for the NSFC Fundamental Research Program for Young Students

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| Research on Control Methods for Precise Release of Cargo with a Dual Underactuated Aerial Transportation System onto Mobile Vessels | May 2024 - Dec 2025 |
| • Funding: NSFC Fundamental Research for Young Students (Doctoral Track) (Sole Principal Investigator, CNY300K) | |
| • Designs nonlinear control strategies for a dual underactuated aerial transportation system to achieve precise payload release onto moving vessels while ensuring system safety and robustness. | |
| Control and Planning of Aerial Transportation Robots | Sep 2020 - Jun 2026 |
| • Doctoral dissertation research topic | |
| • According to load swing conditions, cable length adjustability, and the number of UAVs, develop fault-tolerant control, swing-suppression control, hierarchical control, visual servo control, and multi-UAV cooperative control frameworks. | |

Honors & Awards Three-time National Scholarship; 20+ university-level or higher awards.

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| <ul style="list-style-type: none"> National Scholarship of China (2018, 2024, 2025) Tianjin Outstanding Student (2024) Nankai “Student of the Year” - Nomination (2024) Nankai Gongneng Scholarship, First Class (2023, 2024, 2025) First Prize, North China Five-Province Collegiate Robotics Competition (2024) Second Prize, International Underwater Robot Competition (2018) | <ul style="list-style-type: none"> Zhou Enlai Scholarship, Nankai University - the university’s highest student honor, 10 awardees/year (2025) Nankai University May Fourth Youth Medal - “Youth Leader” (2024) Nankai University Merit Student (2021, 2023, 2024, 2025) First Prize, Tianjin Intellectual Property Innovation & Entrepreneurship-Invention & Design Competition (2024) First Prize, National Postdoctoral Academic Forum on “Xinchuang” Development (2024) |
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Publications & Patents As first/co-first student author: 7 SCI Q2+ journal papers; 1 top-tier robotics conference paper; 2 granted invention patents.

- H. Yu**, et al., Fuzzy-Based Antiswing Control for Variable-Length Cable-Suspended Aerial Transportation Systems Considering the Hook Effect, *IEEE Transactions on Fuzzy Systems*, 2025, 33(2): 621-630. (JCR **Q1**, IF:11.9)
- H. Yu**, et al., Fault-Tolerant Control for Multirotor Aerial Transportation Systems With Blade Damage, *IEEE Transactions on Industrial Electronics*, 2024, 71(10): 12718-12731. (JCR **Q1**, IF:7.2)
- H. Yu**, et al., Adaptive Trajectory Tracking Control for the Quadrotor Aerial Transportation System Landing a Payload Onto the Mobile Platform, *IEEE Transactions on Industrial Informatics*, 2024, 20(1): 23-37. (JCR **Q1**, IF: 9.9)
- H. Yu**, et al., Visual Servoing-Based Anti-Swing Control of Cable-Suspended Aerial Transportation Systems With Variable-Length Cable, *IEEE Transactions on Automation Science and Engineering*, 2025, 22: 5955-5965. (JCR **Q1**, IF:6.4)
- Z. Zhang#, **H. Yu**#, et al., Collaborative Control for Aerial Transportation of Cargo With Dual Quadrotors, *IEEE Transactions on Industrial Informatics*, 2025, 21(1): 752-761. (co-first authors #, JCR **Q1**, IF:9.9)
- K. Cai#, **H. Yu**#, et al., An Enhanced-Coupling Control Method for Aerial Transportation Systems With Double-Pendulum Swing Effects, *IEEE/ASME Transactions on Mechatronics*, 2024, 29(3):2302-2315. (Co-first authors #, JCR **Q1**, IF:7.3)
- X. Liang (advisor), **H. Yu**, et al., Unmanned Aerial Transportation System With Flexible Connection Between the Quadrotor and the Payload: Modeling, Controller Design, and Experimental Validation, *IEEE Transactions on Industrial Electronics*, 2023, 70(2): 1870-1882. (First student author, JCR **Q1**, IF: 7.2, **ESI Highly Cited Paper**)
- H. Yu**, et al., Online Anti-Swing Trajectory Refinement for Variable-Length Cable-Suspended Aerial Transportation Robot, 2025 *IEEE/RSJ International Conference on Intelligent Robots and Systems*. (IEEE IROS, **Top-tier robotics conference**)
- 梁潇 (advisor), **于海(H. Yu)**, 韩建达, 方勇纯, 一种飞行吊运负载移动平台降落控制方法及系统, China Invention Patent: ZL202210944886.X, granted: 2024-5-10.
- 梁潇 (advisor), **于海(H. Yu)**, 刘华旺, 张壮, 方勇纯, 一种伴有负载升降的飞行吊运系统及其控制方法, China Invention Patent: ZL202110308177.8, granted: 2021-3-23.

Skills

Passed CET-4 and CET-6; Familiar with ROS, MATLAB/Simulink, Python, and LaTeX typesetting.