Jianwei Peng (彭建伟)

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Education

Southern University of Science and Technology (SUSTech) • Shenzhen, China Aug.2025 – Present
Ph.D. • *Control Science and Engineering* • Advisors: Prof. Jiankun Wang and Prof. Hong Zhang.

Fujian Institute of Research on the Structure of Matter, CAS • Fuzhou, China Aug.2021 – Jun.2023
Master's Academic Training Unit • Advisors: Prof. Houde Dai
Thesis: Human-following Control Strategies for Mobile Robots in Human-Robot Coexisting Environment (Excellent)

University of Chinese Academy of Sciences • Beijing, China Sep.2020 – Jun.2023
M.Eng. • *Control Engineering* • GPA: 3.48/4.0 • Direct Admission (Top 2%)
Major Courses: Numerical Analysis, Matrix Analysis and Applications, Intelligent Control of Robotic Systems, System Identification and Adaptive Control, Pattern Recognition, Reinforcement Learning, etc.

Huaqiao University • Xiamen, China Sep.2016 – Jun.2020
B.Eng. • *Automation* • GPA: 4.38/5.0 (87.43/100, Ranking 1/29) • Outstanding Graduate (Top 5%)
Major Courses: Advanced Mathematics, Linear Algebra, Probability Theory, Automatic Control Theory, Modern Control Theory, Electrical Drive and Automatic Control System, Embedded Control System, etc.
Thesis: Research on Human-following Robot System Based on Mechanical Impedance Model (Excellent)

Work Experience

Robotic Perception and Intelligence Lab, SUSTech Mar.2025 – Aug.2025
Research and Teaching Assistant with Prof. Jiankun Wang and Prof. Max Q.-H. Meng.

Quanzhou Institute of Equipment Manufacturing, CAS Jul.2023 – Mar.2025
Research Assistant with Prof. Houde Dai

- Researching and developing user-aware control strategies that enable robots to follow or accompany users while respecting their social space.
- Supervising four master's students in the robotics group on their research projects.

Publications

* denotes equal contribution

[1] **J. Peng***, Z. Liao*, Z. Su, H. Yao, Y. Zeng and H. Dai, "A Dual Closed-Loop Control Strategy for Human-Following Robots Respecting Social Space," 2024 IEEE International Conference on Robotics and Automation (**ICRA**), Yokohama, Japan, 2024, pp. 11252-11258. [link], [Video]

[2] **J. Peng**, Z. Liao, H. Yao, Z. Su, Y. Zeng and H. Dai, "MPC-Based Human-Accompanying Control Strategy for Improving the Motion Coordination Between the Target Person and the Robot," 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), Detroit, MI, USA, 2023, pp. 7969-7975. [link], [Video]

[3] **J. Peng**, Z. Liao, Z. Su, H. Yao, Y. Zeng and H. Dai, "Human-Robot Interaction Dynamics-Based Impedance Control Strategy for Enhancing Social Acceptance of Human-Following Robot," 2023 China Automation Congress (**CAC**), Chongqing, China, 2023, pp. 7354-7360. [link]

[4] H. Yao, **J. Peng**, Z. Liao, R. Zhao, and H. Dai, "Leg Detection for Socially Assistive Robots: Differentiating Multiple Targets with 2D LiDAR." In: Sun, F., Meng, Q., Fu, Z., Fang, B. (eds) Cognitive Systems and Information Processing. ICCSIP 2023. Communications in Computer and Information Science, vol 1918. Springer, Singapore. **Best Conference Paper Finalist**. [link]

[5] Z. Liao, **J. Peng**, H. Yao, Z. Su, and H. Dai, "Admittance Control-based Human-accompanying and Obstacle-avoidance Control Strategy for Social Robot," ROBOT, 2024, 46(3): 305-316. [link]

[6] H. Yao, **J. Peng**, H. Dai, and M. Lin, "A Compliant Human Following Method for Mobile Robot Based on an Improved Spring Model," ROBOT, 2021, 43(6): 684-693. [link]

[7] Z. Su, H. Yao, **J. Peng**, H. Dai, et al, "LQR-based control strategy for improving human–robot companionship and natural obstacle avoidance," Biomimetic Intelligence and Robotics, 2024, 4(4): 100185. [link]

Academic Services

Conference Reviewer: ICRA'23'25, IROS'22'23'24'25, ROBIO'22'23, CAC'23

Journal Reviewer: IEEE Transactions on Systems, Man, and Cybernetics, Robotics and Autonomous Systems

Awards and Honors

National Scholarship, Ministry of Education of the People's Republic of China 2022

Future Talent Support Program, Chinese Academy of Sciences, Shanghai Branch 2022

Lu Jiaxi Outstanding Freshmen Scholarship, Lu Jiaxi Foundation 2021

First Prize, Excellent Entrepreneurial Team of College Students in Beijing Region 2021

First Prize, Ninth Exhibition and Promotion of Scientific and Technological Innovation Achievements of Universities 2020

Grand Prize, Intelligent Robotics Competition of 2020 Digital China Innovation Contest 2020

Outstanding Graduates, Huaqiao University 2020

National Second Prize, China University Student Mathematical Modelling Competition (CUMCM) 2018

First-class Undergraduate Academic Scholarship (3 times), Huaqiao University 2017-2019

Skills

- Programming: C++, Python, MATLAB/Simulink
- Softwares & Hardwares: ROS, Gazebo, Git, LaTeX, Arduino, Raspberry Pi
- Languages: Chinese(native), English(IELTS: 6.5, with L: 6.5 R: 7.5 W: 5.5 S: 5.5)
- Life Skills & Sports: Cooking, Soccer, Basketball, Fitness