

Xinyu Jia

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EDUCATION

National University of Singapore

Ph.D. Candidate in Biomedical Engineering

Singapore, Singapore

2020.08 - present

Jilin University

B.Eng. in Vehicle Engineering

Changchun, China

2014.09 - 2018.06

RESEARCH INTEREST

Motion Planning, Motion Control, Robot Locomotion, Robot Manipulation, Trajectory Optimization, Model Predictive Control, Optimal Control, Robust Control, Robot System Design, Mechatronics

SKILLS AND EXPERTISE

Programming: C++, Python, MATLAB

Libraries and Tools: ROS, Gazebo, MoveIt, CoppeliaSim, Pinocchio, CasADi, qpOASES, QuadProg, Eigen, Numpy, RT-Linux, Xenomi, pthreads, CMake, Arduino, CAN, UDP, TTL, CATIA, AutoCAD, Adams, ANSYS, Altium Designer

Language: Chinese (mother tongue), English (fluent)

WORK EXPERIENCE

National University of Singapore, Singapore

2022.04 - 2023.04

Research Engineer (Project: Software & Hardware Development of a 18-DoF Quadruped Manipulator [Link](#))

National University of Singapore, Singapore

2021.07 - 2022.03

Research Assistant (Project: Software & Hardware Development of a 12-DoF Bimanual Robot [Link](#))

Shenzhen DJI Technology Co., Ltd., China

2018.07 - 2020.06

Mechanical Engineer (Project: Hardware Development for Autonomous Driving)

Shenzhen DJI Technology Co., Ltd., China

2018.01 - 2018.05

Chassis Engineer (Intern) (Project: Simulation and Evaluation of Vehicle Chassis)

COMPETITION EXPERIENCE

2018 Formula Student Combustion China (FSCC)

2017.12 - 2018.06

Technical Consultant (Responsibility: Overall technical direction of Gspeed Formula Racing Team [Link](#))

2018 Formula Student Electric China (FSEC)

2017.12 - 2018.06

Technical Consultant (Responsibility: Initiator of monocoque chassis project; Technical support)

2017 Formula Student China (FSC)

2016.12 - 2017.11

Technical Lead (Responsibility: Development of race car chassis; Overall technical direction of the team)

2016 Formula Student China (FSC)

2015.12 - 2016.11

Head of Suspension Group (Responsibility: Development of race car suspension system)

2015 Formula Student China (FSC)

2014.11 - 2015.11

Member of Suspension Group (Responsibility: Design and optimization of upright structure)

PUBLICATIONS

- X. Jia, J. Yang, T. Shi, W. Wang, Y. Pan and H. Yu, "Robust Precision Motion Control based on Enhanced Unknown System Dynamics Estimator for High-DoF Robot Manipulators," *IEEE/ASME Transactions on Mechatronics*, 2024.
- X. Jia, J. Yang, K. Lu, Y. Pan and H. Yu, "Enhanced Robust Motion Control based on Unknown System Dynamics Estimator for Robot Manipulators," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2024.
- J. Yang, X. Jia, Z. Hou, Y. Pan and H. Yu, "Robust Reference Tracking of Linear Uncertain Systems via Uncertainty Estimation and Composite Control," in *IEEE Conference on Decision and Control (CDC)*, 2023.
- K. Lu, S. Han, X. Jia and H. Yu, "Inverse Optimal Adaptive Prescribed Performance Control With Application to Compliant Actuator-Driven Robot Manipulators," in *IEEE Conference on Decision and Control (CDC)*, 2023.

HONORS AND AWARDS

- **Competition:** National Champion of FSCC 2018, First Prize of FSC 2017, Second Prize of FSC 2016
- **Academics:** Third Class Scholarship & Individual Scholarship in 2018, Third Class Scholarship in 2015