




Junheng Li

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Education

- 2022 – present  **Ph.D., University of Southern California** in Mechanical Engineering.
- Advisor: Prof. Quan Nguyen
- 2020 – 2021  **M.S., University of Southern California** in Mechanical Engineering.
- 2016 – 2020  **B.S., Loyola Marymount University** in Mechanical Engineering.

Employment History

- 2020 –present  **Research Assistant**, Dynamics Robotics and Control Lab, University of Southern California.
- August 2023 – May 2024,
Spring 2025  **Teaching Assistant**, Aerospace and Mechanical Engineering, University of Southern California.
- AME 451: Linear Control Systems I

Research Experiences

- 2020 – present  Dynamics Robotics and Control Lab, University of Southern California.
- Advisor: Quan Nguyen, Ph.D.
 - Dynamic humanoid locomotion and loco-manipulation control via MPC.
 - Project Lead on HECTOR humanoid project https://github.com/DRCL-USC/Hector_Simulation.
- 2019 – 2020  Schaal's Group, UROP, Loyola Marymount University.
- Advisor: Natalie Schaal, Ph.D.
 - Analyzed and visulized data collected from rate-and-state fault model based earthquake simulations
 - Debugged and transferred simulation code of rate-and-state fault model based earthquakes.
- Summer 2018  SURP, Loyola Marymount University.
- Advisor: Pezhman Hassanpour, Ph.D.
 - Studied and investigated control strategies for linear inverted pendulums
 - Established controllers via PID control in Arduino platform
 - Design and built inverted pendulum hardware platform

Research Publications

Preprint

- 1 Z. Gu, J. Li, W. Shen, *et al.*, *Humanoid locomotion and manipulation: Current progress and challenges in control, planning, and learning*, 2025.
- 2 L. Krishna, S. Cheng, J. Li, Q. Chen, N. Hovakimyan, and Q. Nguyen, *Diffcotune: Differentiable co-tuning for enhanced cross-domain robot control*, 2025.

- 3 J. Li, Z. Duan, J. Ma, and Q. Nguyen, *Gait-net-augmented implicit kino-dynamic mpc for dynamic variable-frequency humanoid locomotion over discrete terrains*, 2025.
- 4 Q. Chen, J. Li, S. Cheng, N. Hovakimyan, and Q. Nguyen, *Autotuning bipedal locomotion mpc with grfm-net for efficient sim-to-real transfer*, 2024.
- 5 J. Li, O. Kolt, and Q. Nguyen, *Continuous dynamic bipedal jumping via adaptive-model optimization*, 2024.
- 6 J. Li, J. Ma, O. Kolt, M. Shah, and Q. Nguyen, *Dynamic loco-manipulation on hector: Humanoid for enhanced control and open-source research*, 2023.

Journal Articles

- 1 J. Li and Q. Nguyen, "Dynamic walking of bipedal robots on uneven stepping stones via adaptive-frequency mpc," *IEEE Control Systems Letters*, vol. 7, pp. 1279–1284, 2023.

Conference Proceedings

- 1 A.-C. He, J. Li, J. Park, *et al.*, "A novel telelocomotion framework with com estimation for scalable locomotion on humanoid robots," in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, 2025, accepted and to appear.
- 2 J. Li, Z. Le, J. Ma, and Q. Nguyen, "Adapting gait frequency for posture-regulating humanoid push-recovery via hierarchical model predictive control," in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, 2025, accepted and to appear.
- 3 J. Li and Q. Nguyen, "Kinodynamic pose optimization for humanoid loco-manipulation," in *2023 IEEE-RAS 22nd International Conference on Humanoid Robots (Humanoids)*, 2023, pp. 1–8.
- 4 J. Li and Q. Nguyen, "Multi-contact mpc for dynamic loco-manipulation on humanoid robots," in *2023 American Control Conference (ACC)*, 2023.
- 5 J. Li, J. Ma, and Q. Nguyen, "Balancing control and pose optimization for wheel-legged robots navigating high obstacles," in *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, IEEE, 2022, pp. 8835–8841.
- 6 J. Li and Q. Nguyen, "Force-and-moment-based model predictive control for achieving highly dynamic locomotion on bipedal robots," in *2021 60th IEEE Conference on Decision and Control (CDC)*, IEEE, 2021, pp. 1024–1030.

Services

2025	Registration Coordinator of Robotics: Science and Systems Conference
2024-2025	Reviewer of IEEE Robotics and Automation Letters
2024	Reviewer of IEEE Control System Letters
	Reviewer of International Journal of Robotics and Automation
2023-2024	Reviewer of Robotics and Autonomous Systems
2022	Reviewer of IEEE/ASME Transactions on Mechatronics
	Reviewer of Autonomous Robots
2022-2025	Reviewer of IEEE International Conference on Robotics and Automation (ICRA)
2022-2024	Reviewer of IEEE International Conference on Intelligent Robots and Systems (IROS)
2021-2024	Reviewer of IEEE Conference on Decision and Control (CDC)