

Zeming Wu

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Education

City University of Hong Kong — Hong Kong SAR, China
PhD in Mechanical Engineering; advisor: Prof. Lu Liu

Sep 2024–Jun 2028 (Expected)

Tongji University — Shanghai, China
M.Sc. in Control Science and Engineering

Sep 2021–Jun 2024

Supervisor: Prof. Zhuping Wang; research collaboration with Prof. Hao Zhang

Tongji University — Shanghai, China
B.Sc. in Automation

Sep 2017–Jun 2021

Publications

Journal quartiles: JCR 2025 JIF, June 2026 release.

First-author publications

- [1] **Zeming Wu**, Chengcheng Fu, Yahui Hao, and Lu Liu, “Cooperative Geometry-Aware Collision Avoidance for Heterogeneous Robots Via Negotiation on Separating Hyperplanes,” *IEEE Transactions on Robotics*, pp. 1–20, 2026. doi: [10.1109/TR0.2026.3742236](https://doi.org/10.1109/TR0.2026.3742236), JCR 2025: JIF Q1 (Robotics). (**Top-Level Robotics Journal**).
- [2] **Zeming Wu**, Zhuping Wang, Hao Zhang, and Huaicheng Yan, “Quaternion-Based Optimal Interpolation of Similarity Transformations for Multi-Agent Formation,” *IEEE Robotics and Automation Letters*, vol. 9, no. 6, pp. 5783–5790, Jun. 2024. doi: [10.1109/LRA.2024.3396662](https://doi.org/10.1109/LRA.2024.3396662), JCR 2025: JIF Q2 (Robotics).
- [3] **Zeming Wu** and Lu Liu, “Collision-free Control Barrier Functions for General Ellipsoids via Separating Hyperplane,” in *2025 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Hangzhou, China: IEEE, Oct. 2025, pp. 19 637–19 644. doi: [10.1109/IROS60139.2025.11247279](https://doi.org/10.1109/IROS60139.2025.11247279), (**Flagship Robotics Conference**).
- [4] **Zeming Wu**, Zhuping Wang, and Hao Zhang, “GPU-Accelerated Optimization-Based Collision Avoidance,” in *2024 IEEE International Conference on Robotics and Automation (ICRA)*, Yokohama, Japan: IEEE, May 2024, pp. 7561–7567. doi: [10.1109/ICRA57147.2024.10610871](https://doi.org/10.1109/ICRA57147.2024.10610871), (**Flagship Robotics Conference**).

Co-first-author publications

- [5] Yunkai Lv[†], **Zeming Wu**[†], Hao Zhang, Zhuping Wang, and Huaicheng Yan, “Local-Bearing-Based Prescribed-Time Distributed Localization of Multiagent Systems With Noisy Measurement,” *IEEE Transactions on Industrial Informatics*, pp. 1–9, 2024. doi: [10.1109/TII.2024.3383518](https://doi.org/10.1109/TII.2024.3383518), JCR 2025: JIF Q1 (Automation & Control Systems).

Other publications

- [6] Kai Rao, Huaicheng Yan, Yunkai Lv, **Zeming Wu**, Xiaojun Wu, and Youmin Zhang, “Decentralized Pursuit of an Evader With Probabilistic Collision-Free for Differential Drive Robots,” *IEEE Transactions on Cybernetics*, vol. 56, no. 8, pp. 4391–4402, Aug. 2026. doi: [10.1109/TCYB.2026.3670025](https://doi.org/10.1109/TCYB.2026.3670025), JCR 2025: JIF Q1 (Automation & Control Systems).

Research Interests

Distributed optimization, trajectory optimization, and motion planning for multi-agent systems; geometry-aware collision avoidance, robot coordination, and formation control.

Technical Skills

Programming and machine learning: Python, C/C++, MATLAB, PyTorch.

Robotics software and simulators: MuJoCo, Isaac Gym, PyBullet, ROS, ROS 2, Gazebo.

Manipulators: Franka FR3, AIRBOT Play.

Mobile platforms: Genisom M1 quadruped; PX4-based quadrotors; Crazyflie platforms; ground vehicles.

Languages

Mandarin (Native), Cantonese (Native), English.

Reviewing Service

Journals: T-RO, RA-L, T-AC, T-IE, T-II.

Conferences: ICRA, IROS, CDC.