Hongzhi Zang

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EDUCATION

- **Tsinghua University** — Beijing, China
  B.S. in Computer Science, GPA: 3.85/4.00 — *2021-2026(expected)*

EXPERIENCE

- **Carnegie Mellon University** — Pittsburgh, USA
  Visiting Student. Robotics Institute. Advisor: Jiaoyang Li — *March 2024-August 2024*

- **Infinigence AI** — Beijing, China
  Intern. Mentor: Quanlu Zhang — *April 2025-present*

SKILLS SUMMARY

- **Programming Languages**: Python, C++
- **Tools**: Git, github, Markdown, Pytorch, Latex, Linux, ROS
- **Language Skills**: **TOEFL MyBest score** R: 30, L: 30, S:23, W:26; Total: 109. **GRE(09/2024)** V: 157, Q: 170; Total: 327

PUBLICATIONS

Asterisks (*) indicate equal contribution.

- **Online Guidance Graph Optimization for Lifelong Multi-Agent Path Finding** — Accepted by AAAI 2025
  Hongzhi Zang*, *Yulun Zhang*, He Jiang, Zhe Chen, Daniel Harabor, Peter S. Stuckey, Jiaoyang Li*
  arXiv: https://arxiv.org/abs/2411.16506
  - Design two pipelines to incorporate guidance policy with PIBT, a state-of-the-art rule-based MAPF algorithm.
  - Optimize a guidance policy to generate adaptive guidance.
  - Explore scenarios where task distribution changes over time, a challenging yet common situation in real-world applications.
  - Achieve up to 30.75% and 31.59% improvement in throughput for different baselines.

- **Multi-UAV Behavior-based Formation with Static and Dynamic Obstacles Avoidance via Reinforcement Learning** — Accepted by IROS 2025
  Yuqing Xie, Chao Yu*, **Hongzhi Zang***, Feng Gao, Wenhao Tang, Jingyi Huang, Jiayu Chen, Botian Xu, Yi Wu, Yu Wang*
  arXiv: https://arxiv.org/abs/2410.18495
  project site: https://sites.google.com/view/uav-formation-with-avoidance
  - Explore the challenging task of requiring drones to both maintain formation and avoid obstacles.
  - Design a two-stage training pipeline to enhance the policy performance.
  - Deploy our policy in the real world, achieving the highest success rate while maintaining proper formation.

ENGINEERING PROJECTS

- **RLinf: Reinforcement Learning Infrastructure for Agentic AI** — April 2025 – Present
  System paper: https://arxiv.org/abs/2509.15965 — *RLinf Team, Infinigence AI*
  Technical report (RL+VLA in RLinf): https://arxiv.org/abs/2510.06710
  - Integrated multiple embodied AI benchmarks (e.g., ManiSkill, LIBERO) into the RLinf framework.
  - Implemented and benchmarked reinforcement learning algorithms (PPO, GRPO) within RLinf.
  - Integrated and evaluated various Vision-Language-Action (VLA) architectures (OpenVLA, OpenVLA-OFT).
  - Conducted extensive experiments and summarized best practices for training VLA models in RL settings.

Courses

- **Selected Courses**

    - **Major Courses**: Calculus A(1)(A), Machine learning(A), Game Theory(A), Deep Learning(A), AI+X Computing Acceleration: From Algorithms Development, Analysis, to Deployment(A), Natural Language Processing(A)

    - **Others**: Introduction to the Social Service of College Student(A), Writing and Communication(A), Appreciation and Practice of Dance($A+$)

- **Selected Course Projects**

    - **Custom Topology and Routing for ~~GPT~~ Matrix Multiplication**   August 2023

      AI+X Computing Acceleration

      Instructor: Kaisheng Ma. Collaborator: Junyu Chen

        * Implement an on-chip network topology combining two binary trees with a multi-cast mechanism on the branches to accommodate the properties of matrix multiplication in simulation.
        * Outperform the Mesh baseline in terms of packet latency and reception ratio.
        * One of the excellent projects in the course.

    - **Wingardium Leviosa: Float Anything!**   May 2023

      Deep Learning

      Instructor: Yi Wu. Collaborator: Junyu Chen, Kaifeng Lin

        * Propose the idea: An application that takes a photo as input and generates a video in which all objects appear to be floating in the air.
        * Implement the *inpainting* component of the whole pipeline.
        * Implement a user-friendly interface for easy interaction.
        * One of the most popular projects in the course.

    - **Create a 3D Model of Yourself : Interactive Structure from Motion**   June 2023

      Computer Vision

      Instructor: Yang Gao. Collaborator: Junyu Chen

        * Implement a pipeline that generates a 3D point cloud of a person, excluding the background, from a series of photos.

Honors and Awards

- Excellent Social Work Scholarship   *2022, 2023*

- Bronze Award, Tsinghua University Social Practice Excellent Team   *2022*

- Dazhong Wang Scholarship (awarded to **top 1% of students** university-wide)   *2024*

- 3rd Prize, 42nd The Challenge Cup Technological Innovation Competition at Tsinghua University   *2024*