

Dingqi Zhang

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EDUCATION

University of California, Berkeley

Expected May 2026

Ph.D. in Robotics

- GPA: 3.89
- Graduate Division Block Grant Award (Aug. 2021 - Aug. 2022)
- Ignite Grant (top 3%) and Spark Grant (top 7%) winner for autonomous robotics project

Cornell University

May 2021

B.Sc. in Computer Science and Mechanical Engineering

- GPA: 4.00, Summa Cum Laude
- Engineering Learning Initiatives Undergraduate Research Award (Summer 2019)

SELECTED PUBLICATIONS

A Learning-based Quadcopter Controller with Extreme Adaptation

Dingqi Zhang, Antonio Loquercio, Jerry Tang, Ting-Hao Wang, Jitendra Malik, Mark W. Mueller

Preprint, 2024

Learning a Single Near-hover Position Controller for Vastly Different Quadcopters

Dingqi Zhang, Antonio Loquercio, Xiangyu Wu, Ashish Kumar, Jitendra Malik, Mark W. Mueller

IEEE International Conference on Robotics and Automation (ICRA) 2023

EXPERIENCE

High Performance Robotics Lab (PI: Mark W. Mueller)

August 2021 – Present

Graduate Student Researcher

Berkeley, CA

- Designed and implemented advanced learning-based adaptive control techniques for aerial vehicles, addressing large parameter uncertainties and disturbances
- Combined behavior cloning with model-free reinforcement learning in a dual-learning framework, achieving generalization to test set 16x wider than the training set with limited observations and resources
- Contributed to the high-stared simulator *Flightmare* by implementing the state-of-the-art RL controller (Rapid Motor Adaptation) in PyTorch
- Developed a special domain randomization algorithm informed by real-world design, enhancing sim-to-real transfer
- Led real-world flight tests on quadcopters, integrating control algorithms with ROS

Zipline International Inc.

May 2023 – August 2023

GNC Intern

South San Francisco, CA

- Developed a high-wind resistant flight controller in production code that reduces extreme weather failure rate up to 20%
- Implemented Monte Carlo simulation in Julia to validate and fine-tune control algorithms
- Analyzed real flight data to optimize controller performance and identify future improvements
- collaborated on powertrain controller design, preventing motor damage from overheating

PROJECTS

Tennie | *Python, Unity*

Fall 2023 - Present

- Designed and developed an autonomous tennis ball collector, winning the Ignite Grant (top 3%) and Spark Grant (top 7%) out of over 100 submissions
- Created a digital twin in Unity for rapid testing and optimization of control algorithms
- Implemented vision-based motion planning and control algorithms for efficient ball collection

TECHNICAL SKILLS

Research Expertise: hardware integration, adaptive control, reinforcement learning, end-to-end control, dynamics modeling and simulation, sim-to-real transfer

Programming Languages: C/C++, Python, Linux Shell, MATLAB, Julia, JAVA

Technologies/Frameworks: ROS, git, PyTorch, LaTeX