Dingqi Zhang

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Education

University of California, Berkeley Expected May 2026

Ph.D. in Mechanical Engineering

- GPA: 3.84
- 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)

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 Mueller) August 2021 – Present

Graduate Student Researcher *Berkeley, CA*

- Developed an advanced controller adaptive across quadcopters with parameter differences of several orders of magnitude for agile and robust flight with disturbance rejection
- Implemented a dual training strategy combining behavior cloning with model-free RL for high-frequency, low-level control of quadcopters
- Increased neural network inference speed by 35x using Mobile Neural Network (MNN) optimization
- Benchmarked performance against state-of-the-art adaptive control algorithms through Monte Carlo simulations
- 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*

- Developped a high-wind resistant flight controller in productiton code that reduces extreme weather failure rate up to 20%
- Impelmented 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, state estimation, dynamics modeling, simulation and control of aerial vehicles
Programming Languages: C/C++, Python, Linux Shell, MATLAB, Julia, JAVA
Technologies/Frameworks: ROS, git, PyTorch, LaTeX