Dingqi Zhang

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Education

University of California, Berkeley Expected May 2026

Ph.D. Student in Mechanical Engineering

- GPA: 3.84
- Graduate Division Block Grant Award (Aug. 2021 - Aug. 2022)

Cornell University August 2017 - May 2021

B.Sc. in Computer Science and Mechanical Engineering

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

Experience

High Performance Robotics Lab (PI: Mark Mueller) August 2021 – Present

Graduate Student Researcher *Berkeley, CA*

- Designed a zero-shot rapid quadcopter adaptive controller with adaptation to body dynamics and disturbance rejection using model-free RL [arxiv:2209.09232]
- Optimized neural network inference efficiency with 35x speed increase using MNN
- Improved a rapid collision-free trajectory generator by integrating obstacle detection and state estimation with data from Intel RealSense D455
- Benchmarked the performance of designed algorithms with state-of-the-art adaptive control algorithms with Monte Carlo simulation
- Conducted flight tests on quadcopters with ROS

Biorobotics and Locomotion Lab (PI: Andy Ruina) January 2019 – May 2021

Undergraduate Student Research Assistant *Ithaca, NY*

- Implemented the embedded system for an autonomous sailboat on the SAM-E70 platform with MPLAB
- Developed an interactive ocean sailing simulator for numerous sailboat dynamics models with real weather data in MATLAB
- Achieved automatic backend database retreival from Global Marine Data NOAA
- Built visualizations for evaulating sailboat's racing performance with MATLAB

Robotic Personal Assistant Laboratory (PI: Ross Knepper) Janunary 2019 – July 2019

Undergraduate Student Research Assistant *Ithaca, NY*

- Explored model based control algorithms for peg-in-hole problems on the Baxter platform
- Implemented object localization algorithms for accurate insertion task with OpenCV
- Designed and manufactured 3d printed mechanical components to assist insertion

Projects

Bitcoin Price Predictor with Sentiment Analysis | *Python* May 2021

- Designed a price predictor for Bitcoin by the major sentiment polarity of twitter tweets with Deep Neural Network

English-Cayuga Translator | *OCaml* May 2019

- Implemented a two-way translator for English and the native American language Cayuga
- Optimized the word search speed by implementing both dictionaries as red-black trees

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, Java, MATLAB
Technologies/Frameworks: ROS, git, Pytorch, LaTeX