Curriculum Vitae/Resume

Ke Wang

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Education

Stanford University | *Stanford, CA, U.S.* **Sep 2024 – Present**

- M.S. in Mechanical Engineering
- GPA: 3.95 | Expected Graduation: June 2026

Zhejiang University | *Hangzhou, Zhejiang, CHINA* **Sep 2020 – Jun 2024**

- B.S. in Mechanical Engineering
- GPA: 3.95 | Ranking: Top 3% among 168 students
- Member of Advanced Honor Class of Engineering Education (ACEE), Chu Kochen Honors College (CKC)

Publication

- J. W. Kim*, **K. Wang***, Z. Fu, S. Chen, C. Zhao, J. Lai, and C. Finn, "Ego-Pi: VLA Fine-Tuning for Ego-Centric Human and Robot Data." 2026 IEEE/CVF Conference on Computer Vision and Pattern Recognition (under review)
- H. Zong, J. Zhang, L. Jiang, K. Zhang, J. Shen, Z. Lu, **K. Wang**, Y. Wang, and B. Xu, Bionic lightweight design of limb leg units for hydraulic quadruped robots by additive manufacturing and topology optimization. Bio-des. Manuf. 7, 1–13 (2024). https://doi.org/10.1007/s42242-023-00256-0

Research Experience

Ego-Pi: VLA Fine-Tuning for Ego-Centric Human and Robot Data **April 2025 - Present**

Department of Computer Science, Stanford University, Advisor: Prof. Chelsea Finn

- **Developed an Egocentric Human–Robot Data Collection System:** Built synchronized recording pipelines integrating egocentric camera views, hand tracking, and robot states for high-quality imitation learning data.
- **Developed a Robust Teleoperation and Control Framework:** Built a modular ROS-based teleoperation system supporting dual-arm control and policy evaluation on real robot.
- **Integrated Human Motion into Robot Control Space:** Processed stereo human egocentric images and established consistent alignment between human and robot datasets via DexRetargeting and direct joint mapping.

GRaD-Nav-Onboard: Learning Visual Drone Navigation for Dynamic Environments via Differentiable Radiance Fields **April 2025 - Present**

Department of Aero. & Astro., Stanford University, Advisor: Prof. Mac Schwager

- **Developed a Vision-based Camera Motion Prediction Module:** leveraging a GRU + MLP architecture with a physics-informed loss (PINN) to achieve high-precision velocity estimation from onboard visual inputs.
- **Implemented a Dynamic GS-Splat Simulation Environment:** Built a fast-rendering simulator supporting moving obstacles and scene variations for training drone navigation policies, enabling zero-shot policy transfer to real-world scenarios.
- **Designed a Teacher–Student Policy Learning Framework:** Built on GRaD-Nav, using Gaussian Radiance Fields and differentiable dynamics to distill expert navigation into efficient onboard controllers for dynamic obstacle avoidance.

Safety Critical Control of Quadruped Robots based on Control Barrier Function **May 2023 - Sep 2023**

Department of Mechanical Engineering, University of California, Berkeley, Advisor: Prof. Koushil Sreenath

- **Migrated an Advanced Control Framework for Quadruped Robots:** Successfully migrated a control framework for quadruped robots based on OCS2 and ROS-Control to the Unitree GO1 robot.
- **Innovated in Collision Modeling and Avoidance:** Developed a streamlined collision model using cuboids, reducing computational load and enhancing robot-environment interaction.

- **Enhanced Control Framework with Control Barrier Function:** Incorporated Control Barrier Function (CBF) within the Model Predictive Control framework to enable safe navigation in confined spaces, achieving great performance in scenarios like traversing openings half the robot's height.

Advanced Controller Design for Hydraulic Quadruped Robots: Single-Leg Jump Optimization

the State Key Laboratory of Fluid Power & Mechatronic Systems, Zhejiang University, **Apr 2023 - May 2024**

Advisor: Prof. Junhui Zhang

- **Developed Single Leg model for a Hydraulic Quadruped Robot:** Built Simulation Model for Single-Leg using MATLAB Simulink. Developed a Single-Leg kinematic model and a hydraulic flow monitoring module.
- **Developed a Controller Using Reinforcement Learning Based on Foot-End Trajectory Input:** Developed a Single-Leg Jumping Joint Controller Based on Foot-End Trajectory Input. Optimized Trajectory for Jumping Control Using the DDPG Algorithm.
- **Advancing Controller Design with Reinforcement Learning:** Enhanced the controller by integrating flow control and trajectory-based input using DDPG Algorithm. Improve the robot's jumping accuracy and efficiency.

Selected Awards

Zhejiang Province Outstanding Graduate (undergraduate) **Jun 2024**

International Exhibition of Inventions Geneva (Silver Medal) **Apr 2023**

Zhejiang Provincial Government Scholarship (Top 0.1% across Zhejiang Province) **Oct 2022**

Second-Class Scholarship of Zhejiang University (Top 5% across major undergraduate students)

The 8th Engineering Practice and Innovation Competition of Zhejiang University **Oct 2021 | Oct 2022 | Oct 2023**

(2nd Prize) **Jul 2022**

The 27th Mechanical (Innovation) Design Competition of Zhejiang University (2nd Prize) **Jul 2022**

The 13th National Collegiate Mathematics Competition (1st Prize) **Dec 2021**

Extracurricular Activities

Member & Director of Online Volunteer Teaching Program **Nov 2021 - Dec 2022**

West Region Attached Association, Zhejiang University

- Responsible for online teaching volunteer project for left-behind children in western China and volunteer training

Head of External Affairs **Nov 2020 - Dec 2021**

Koala Studio (Student Integrated Innovation Platform of Zhejiang University), Zhejiang University

- Responsible for external exchange activities and affairs for Koala Studio

Computer Skills

- ROS, MATLAB, AutoCAD, SolidWorks, C, CPP, Python, Linux, ANSYS