

Albert Jianqiao Zhai

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Education

University of Illinois at Urbana-Champaign

Ph.D. in Computer Science

Fall 2021 – May 2027 (Expected)

California Institute of Technology

B.S. in Computer Science with Minor in Information and Data Sciences

Fall 2017 – Spring 2021

Research Experience

Research Assistant (Computer Vision)

Shenlong Lab, UIUC

Advisor: Prof. Shenlong Wang

Summer 2022 – Present

Research Intern (Robot Learning/Vision)

Perceptual Reasoning and Interaction Research, Allen Institute for AI

Advisors: Dr. Wei-Chiu Ma, Dr. Jiasen Lu, Dr. Kuo-Hao Zeng

Summer 2024 – Fall 2024

Research Assistant (Computational Imaging)

Computational Imaging Science Lab, UIUC

Advisor: Prof. Mark Anastasio

Fall 2021 – Spring 2022

Research Intern (Robotics/Learning)

Intelligent and Interactive Autonomous Systems Group, Stanford University

Advisor: Prof. Dorsa Sadigh

Summer 2020 – Fall 2020

Research Intern (Deep Learning)

Anandkumar Lab (Tensorlab), Caltech

Advisor: Prof. Animashree Anandkumar

Summer 2019 – Spring 2020

Research Intern (Vision/Cognition)

Shimojo Lab, Caltech

Advisor: Prof. Shinsuke Shimojo

Spring 2018 – Spring 2019

In Submission

- **A. J. Zhai**, K. H. Zeng, J. Lu, A. Farhadi, S. Wang, W. C. Ma, *Imitating What Works: Simulation-Filtered Learning from Human Videos*, submitted to RA-L 2025

Publications

- **A. J. Zhai**, X. Wang, K. Li, Z. Jiang, J. Zhou, S. Wang, Z. Jin, K. Guan, S. Wang, *CropCraft: Complete Structural Characterization of Crop Plants from Images*, 3DV (Oral), 2026 [[preprint](#)]
- B. Chandaka, G. Wang, H. Chen, H. Che, **A. J. Zhai**, S. Wang, *Human-like Navigation in a World Built for Humans*, CoRL, 2025 [[project](#)] [[paper](#)] [[code](#)]
- T. Cheng, **A. J. Zhai**, E. Chen et al., *Demeter: A Parametric Model of Crop Plant Morphology from the Real World*, ICCV, 2025 [[project](#)] [[paper](#)] [[code](#)]
- D. Y. Yao, **A. J. Zhai**, S. Wang, *Uni4D: Unifying Vision Foundation Models for 4D Modeling from a Single Video*, CVPR (Highlight), 2025 [[project](#)] [[paper](#)] [[code](#)]

- H. Hsu, Z. Lin, **A. J. Zhai**, H. Xia, S. Wang, *AutoVFX: Physically Realistic Video Editing from Natural Language Instructions*, 3DV, 2025 [[project](#)] [[paper](#)] [[code](#)]
- **A. J. Zhai**, Y. Shen, E. Chen, G. Wang, X. Wang, S. Wang, K. Guan, S. Wang, *Physical Property Understanding from Language-Embedded Feature Fields*, CVPR, 2024 [[project](#)] [[paper](#)] [[code](#)]
- J. M. C. Marques, **A. J. Zhai**, S. Wang, K. Hauser, *On the Overconfidence Problem in Semantic 3D Mapping*, ICRA, 2024 [[paper](#)] [[code](#)]
- **A. J. Zhai**, S. Wang, *PEANUT: Predicting and Navigating to Unseen Targets*, ICCV, 2023 [[project](#)] [[paper](#)] [[code](#)]
- Y. Shen, B. Chandaka, Z. Lin, **A. J. Zhai**, H. Cui, D. A. Forsyth, S. Wang, *Sim-on-Wheels: Physical World in the Loop Simulation for Autonomous Driving*, RA-L, 2023 [[project](#)] [[paper](#)] [[code](#)]
- **A. J. Zhai**, J. Kuo, M. A. Anastasio, U. Villa, *Memory-Efficient Self-Supervised Learning of Null Space Projection Operators*, SPIE Medical Imaging, 2023 [[paper](#)]
- S. Karamcheti, **A. J. Zhai**, D. P. Losey, D. Sadigh, *Learning Visually Guided Latent Actions for Assistive Teleoperation*, L4DC, 2021 [[paper](#)] [[code](#)]
- H. Su, L. Wu, J. H. Jiang, R. Pai, A. Liu, **A. J. Zhai**, P. Tavallali, M. DeMaria, *Applying Satellite Observations of Tropical Cyclone Internal Structures to RI Forecast With Machine Learning*, Geophysical Research Letters, 2020 [[paper](#)]
- J. H. Jiang, **A. J. Zhai** et al., *Using Deep Space Climate Observatory Measurements to Study the Earth as An Exoplanet*, Astronomical Journal, 2018 [[paper](#)]
- X. Jiang, A. Kao, A. Corbett, E. Olsen, T. Pagano, **A. J. Zhai**, S. Newman, L. Li, Y. L. Yung, *Influence of Droughts on Mid-tropospheric CO₂*, Remote Sensing, 2017 [[paper](#)]

Conference Presentations

- **A. J. Zhai**, J. Kuo, M. A. Anastasio, U. Villa, *Memory-efficient self-supervised learning of null space projection operators*, SPIE Medical Imaging: Physics of Medical Imaging, San Diego, CA, 22 February 2023 [[link](#)]
- **A. J. Zhai**, S. M. Hung, S. Shimojo, *The role of color preference under interocular suppression*, Vision Sciences Society Annual Meeting, St. Pete Beach, FL, 21 May 2019 [[link](#)]
- J. H. Jiang, **A. J. Zhai** et al., *Using Deep Space Climate Observatory Measurements to Study the Earth as An Exoplanet*, AGU Fall Meeting, New Orleans, LA, 14 December 2017 [[link](#)]

Teaching Experience

Teaching Assistant, UIUC

- **CS 498**: Machine Perception, **CS 444**: Deep Learning for Computer Vision, **CS 101**: Introduction to Computing: Engineering and Science

Teaching Assistant, Caltech

- **CS 157**: Statistical Inference, **CS 165**: Foundations of ML and Statistical Inference, **CS 155**: Machine Learning and Data Mining, **CS 038**: Algorithms, **CS 001**: Introduction to Computer Programming

Service

Reviewer/Program Committee Member

- CVPR, ICCV, ICRA, NeurIPS, AAAI, WACV, 3DV, Wild3D Workshop

Session Chair

- CSL Student Conference Robotics Session

Selected Awards

- 2025 Yunni and Maxine Pao Memorial Fellowship
- 2025 ICCV Outstanding Reviewer Award
- 2024 Qualcomm Innovation Fellowship Finalist
- 2024 CSL Student Conference Presentation Award
- 2019 Google Tech Challenge 1st Place Team
- 2018 Caltech Ph 11 Research Fellowship