

Zihao Zou
Tel: 3144655845 | [Email](#)
[Website](#) | [Google Scholar](#)

Educational Background

University of California-Irvine College of Engineering, B. S. in Computer Engineering	Irvine, CA 2016 - 2020
Washington University in St. Louis McKelvey School of Engineering, M. S. in Computer Science	St. Louis, MO 2021 - 2022
University of North Carolina, Chapel Hill Department of Computer Science, Ph.D. student	Chapel Hill 2024 - Present

Research Interests

My research interests are in 3D reconstruction, high-speed imaging systems, generative models, and imaging inverse problems.

Publication

- **Z. Zou**, Z. Qu, B. Vivek, A. Pediredla, P. Chakravarthula, "**High-Speed Dynamic 3D Imaging with Sensor Fusion Splatting**," arXiv preprint arXiv:2502.04630 ([Paper](#))
- Z. Qu, **Z. Zou**, B. Vivek, P. Chakravarthula, A. Pediredla, "**Event fields: Capturing light fields at high speed, resolution, and dynamic range**," IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR Highlight**) 2025([Paper](#))
- **Z. Zou**, J. Liu, S. Shoushtari, Y. Wang, U. S. Kamilov, "**FLAIR: A Conditional Diffusion Framework with Applications to Face Video Restoration**," IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), Tuscon, Arizona, USA, 2025 ([Website](#)) ([Paper](#))
- C. Park, W. Gan, **Z. Zou**, Y. Hu, Z. Sun, and U. S. Kamilov, "**A Structured Pruning Algorithm for Model-based Deep Learning**," Journal of Mathematical Imaging and Vision, 67(2), 21. ([Paper](#))
- **Z. Zou**, J. Liu, B. Wohlberg and U. S. Kamilov, "**Deep Equilibrium Learning of Explicit Regularization Functionals for Imaging Inverse Problems**," in IEEE Open Journal of Signal Processing. (**top 25 downloaded articles 2023-2024**) ([Website](#)) ([Paper](#))
- J. Hu, S. Shoushtari, **Z. Zou**, J. Liu, Z. Sun and U. S. Kamilov, "**Robustness of Deep Equilibrium Architectures to Changes in the Measurement Model**," IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), Rhodes Island, Greece, 2023 ([Paper](#))

Research Experience

VCAIL Group Principal Investigator: Dr. Praneeth Chakravarthula	University of North Carolina 2024 - Present
• High Speed 3D Imaging - Investigating high speed imaging system with cameras fusion gaussian splatting.	
• High Speed Light Field - Investigating high speed light field imaging with novel optical designs.	

Computational Imaging Group

Principal Investigator: Dr. Ulugbek Kamilov	Washington University in Saint Louis 2021 - 2023
• Generative Models - Proposed "FLAIR", a conditional video diffusion model with temporal alignment with application to face video restoration.	
• Model-based Deep Learning - Proposed "ELDER", a deep equilibrium learning framework with explicit regularization functionals for inverse problems. - Proposed "SPADE", a pruning algorithm for model-based deep learning for accelerating inference time. - Investigated the robustness of deep equilibrium models under mismatched measurement models in contrast to Plug-and-play frameworks.	

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[HERO Lab](#)

Principal Investigator: Dr. Cao Huang

- Blood Pressure Estimation
 - Investigated cordless blood pressure estimation incorporating with ECG and PPG.
- Laser Speckle Contrast Imaging
 - Laser speckle contrast imaging with portable laser sources and mobile devices.

University of California,
Irvine, CA
September 2019 -
September 2020

[Work Experience](#)

Researcher

- Conducted research on computational imaging.

Washington University in
Saint Louis
February 2023 -
December 2023
Saint Louis, MO

Teacher Assistant

Course: Natural Language Processing

- Collaborated in designing the course curriculum and content.
- Organized and conducted regular TA coordination meetings.

Washington University in
Saint Louis
September 2022 -
January 2023
Saint Louis, MO

Embedded System Engineer

- Compression Algorithm for Resource-Limited Devices
- Embedded Device Programming

Techphant. Inc
October 2020 - May 2021
Guangzhou, China

[Skills](#)

Languages: Chinese (Native Speaker), English

Programming Skills: Python, C/C++/CUDA, Web Design.

Programming Skills

Python

- Data analysis (Numpy, Pandas, Scipy). Deep learning frameworks (Pytorch). Distributed learning.

C++/CUDA

- Four-year experiences in C/C++. Embedding system programming. Bluetooth communication.

Web Design

- HTML/CSS/Javascript. Designing project website and personal website.