ZIHUI (RAY) WU

Curriculum Vitae (July 2022)

zwu2@caltech.edu ◇ `zihuiwu.github.io`

EDUCATION

California Institute of Technology (Caltech) Pasadena, CA
Ph.D. student in Computing & Mathematical Sciences Sep. 2020 — May 2026 (expected)
Research advisor: Katherine L. Bouman

Washington University in St. Louis (WUSTL) St. Louis, MO
Bachelor of Science in Computer Science Aug. 2016 — May 2020
Second major: Mathematics
Research advisor: Ulugbek S. Kamilov

RESEARCH INTERESTS

My research interests lie at the intersection of computational imaging, optimization, and machine learning. I am most interested in designing machine learning algorithms for the full-pipeline optimization of biomedical imaging applications, including CT, MRI, ultrasound, etc.

PUBLICATIONS

5. **Z. Wu***, T. Yin*, A. V. Dalca, and K. L. Bouman, "Region-of-Interest Adaptive Acquisition for Accelerated MRI," *under review*, 2022.

4. T. Yin*, **Z. Wu***, H. Sun, A. V. Dalca, Y. Yue, and K. L. Bouman, "End-to-End Sequential Sampling and Reconstruction for MR Imaging," *Proceedings of Machine Learning for Health (ML4H)*, PMLR 158:261-281, 2021.
   - **Best Paper Award**
   - Accepted as posters to ICCP 2021 and CVPR 2021 Computational Cameras and Displays Workshop

3. Y. Sun*, **Z. Wu***, X. Xu*, B. Wohlberg, and U. S. Kamilov, "Scalable Plug-and-Play ADMM with Convergence Guarantees," *IEEE Transactions on Computational Imaging (TCI)*, vol. 7, pp. 849-863, 2021.

2. **Z. Wu**, Y. Sun, A. Matlock, J. Liu, L. Tian, and U. S. Kamilov, "SIMBA: Scalable Inversion in Optical Tomography Using Deep Denoising Priors," *IEEE Journal of Selected Topics in Signal Processing (JSTSP)*, vol. 14, no. 6, pp. 1163-1175, Oct. 2020, doi: 10.1109/JSTSP.2020.2999820.
   - Also accepted as paper to ICIP 2021.

1. **Z. Wu**, Y. Sun, J. Liu, and U. S. Kamilov, "Online Regularization by Denoising with Applications to Phase Retrieval," *Proceedings of the IEEE International Conference on Computer Vision Workshop (ICCVW)*, 2019.
   - **Oral presentation**

INVITED TALKS

- EI Conference on Machine Learning for Scientific Imaging Jan. 2020, Online
  - Title: *End-to-End Sequential Sampling and Reconstruction for MR Imaging*

RESEARCH AND WORK EXPERIENCE

- *Research Assistant*, A.A. Martinos Center for Biomedical Imaging, MGH, Harvard Medical School
  Jun. 2022 — present Charlestown, MA
  - Research Assistant with Prof. Adrian V. Dalca.

- *Research Assistant*, Caltech
  Sep. 2020 — present   Pasadena, CA
  - Graduate Research Assistant with Prof. Katherine L. Bouman.
- *Research Assistant*, WUSTL
  Sep. 2018 — Jun. 2020   St. Louis, MO
  - Undergraduate Research Assistant with Prof. Ulugbek S. Kamilov.
- *Research Assistant*, WUSTL
  Feb. 2018 — Sep. 2018   St. Louis, MO
  - Undergraduate Research Assistant with Prof. William Yeoh.
- *Website Developer*, Beijing Hengxinqihua Information Technology Co., Ltd.
  May 2017 — Jul. 2017   Beijing, China
- *Research Assistant*, Institute of Computing Technology, Chinese Academy of Sciences
  Sep. 2015 — Nov. 2015   Beijing, China
  - Worked as a research assistant for the project "Video-based Object Tracking and Recognition."

HONORS

- *Best Paper Award*, Machine Learning for Health (ML4H) 2021   2021
- *Kortschak Scholars Graduate Fellowship*, Caltech   2020 — 2022
- *Dean's List*, WUSTL   FL2016 — FL2019 (all semesters except SP2020 due to COVID-19)
- Selected member of Engineering's Mentor Collective program, WUSTL   2018, 2019
- *Certificate of Distinction*, American Mathematics Competitions   2015