Zihao Zou

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Education

- **Washington University in Saint Louis** — Saint Louis, MO
  M.S. in Computer Science — *Expected Winter 2022*
- **University of California, Irvine** — Irvine, CA
  B.S. in Computer Engineering — *Spring 2020*

Skills Summary

- **Proficient Areas**: Computational Imaging, Computer Vision, Optimization, Neural Radiance Field, Denoising Diffusion Model
- **Programming Skills**: Python, C/C++, CUDA, Pytorch, Distributed Learning

Research

- **Computational Imaging Group** — Saint Louis, MO
  Masters Research Assistant, advised by Prof. Ulugbek Kamilov — *Aug 2021 - Current*
  - **Denoising Diffusion Models for Image Inverse Problems(ongoing)**: Applying diffusion models in image inverse problems
  - **Deep Model-Based Architectures using Explicit Regularizers for Computational Imaging(up-and-coming)**: Design probabilistic priors that bring convergence guarantee for model-based image restoration(PnP/ReD). Propose a new training method utilizing Deep Equilibrium Architecture to train a task-oriented artifact removal operator
  - **Robustness of Deep Equilibrium Architectures to Changes in the Measurement Model(paper)**: Investigate the robustness of DEQ priors to changes in the measurement models.
- **HERO Lab** — Irvine, CA
  Bachelors Research Assistant, advised by Prof. Hung Cao — *Jul 2019 - Sep 2020*
  - **Laser Speckle Contrast Imaging with Smart Phone Camera**: Investigate the feasibility of using a smart phone camera to monitor the laser speckle pattern on human's fingers.

Projects

- **Neural Implicit Representation of MRI Volumetric Data Using NVIDIA "Instant NGP"**: A preliminary test on instant neural radical field of MRI volumetric data inspired by NVIDIA's "Instant NGP". Github: https://github.com/zihaozou/nerf_volume
- **Pytorch Implementation of YOLO**: Reimplement a Pytorch version of YOLO v1, which takes VGG11 as backbone. Github: https://github.com/zihaozou/my_yolov1

Working Experience

- **Washington University in Saint Louis** — Saint Louis, MO
  Teacher Assistant for the course "Nature Language Processing" — *Aug 2022 - Dec 2022*
  - **Assist Teaching**: Serve as a leading TA, and corporate with other TAs to hold office hours and answer students' questions. Draft slides, homework, exams and projects. Set up the course website and Canvas.
- **Techphant Inc.** — Guangzhou, Guangdong, China
  Embedded System Engineer — *Oct 2020 - May 2021*
  - **Delta encoding for Embedded Devices**: Enable firmware update on embedded devices by using delta encoding. Github: https://github.com/zihaozou/Delta
  - **Embedded Device Development**: Develop sensor network on STM32 with C/C++.