Zhuokai Zhao

zhuokai@uchicago.edu | zhuokai-zhao.com | https://github.com/zhuokaizhao | https://www.linkedin.com/in/zhuokai-zhao-a9385169/

Education

University of Chicago *Chicago, IL*

Ph.D. in Computer Science. Advisors: Professor Yuxin Chen, Bo Li, and Gordon L Kindlmann. *2018 - 2024 (expected)*

- Concentrations: Multimodal (vision-language) Deep learning, Active Learning, Recommender System, and Interpretable ML.
- Award: Doctoral Fellowship, Center for Data and Computing (CDAC)
- Proposed Grant: 2024 AI+Science Research Initiative, Data Science Institute (DSI)

Johns Hopkins University *Baltimore, MD*

M.S. in Robotics. Advisors: Professor Nassir Navab and Russell Taylor. *2016 - 2018*

- Concentrations: Augmented Reality and Medical Imaging Analysis.

University of Illinois at Urbana-Champaign *Champaign, IL*

B.S. in Electrical Engineering. Advisor: Seth Hutchinson. *2013 - 2016*

- Concentrations: Computer Vision; Robots Manipulation and Control.

Work Experience

Twitch, a subsidiary of Amazon *New York, NY*

Applied Scientist Intern *Jun, 2023 - Aug, 2023*

- Proposed a multimodal model fusing features from both streaming (vision) and metadata (text) to conduct real-time violent contents moderation.
- Constructed a custom dataset supporting the training and testing of the proposed multimodal approach.

Meta AI *Menlo Park, CA*

MLE Intern and Part-time Student Researcher *Jun, 2022 - Nov, 2022*

- Implemented User-Centric Ranking, a new formulation in recommender system that trains better-converged models on substantially larger datasets.

Kitware Inc. *Clifton Park, NY*

R&D Intern *Jun, 2019 - Sep, 2019*

- Contributed to open-source libraries including the Visualization Toolkit (VTK), Open Chemistry, and Tomviz.

JD.COM Silicon Valley Research Center *Mountain View, CA*

Research Intern *May, 2018 - Sep, 2018*

- Developed body-garment registration (virtual try-on) using both rigid and non-rigid (collision-detection based optimization) point cloud alignments.
- Developed in-house simulation engine based on ARCSim to generate dynamic body-garment animations.

Siemens Corporate Research *Princeton, NJ*

Research Intern *May, 2017 - Aug, 2017*

- Developed an algorithm that reconstructs patients in real-time from 2D stream with limited field of view. Integrated AR for interactive visualizations.

Publications

* indicates equal contributions.

(1) **Zhuokai Zhao**, Yibo Jiang, and Yuxin Chen. Direct Acquisition Optimization for Low-Budget Active Learning. 2024

(2) Zhaorun Chen*, **Zhuokai Zhao***, Hongyin Luo, Huaxiu Yao, Bo Li, and Jiawei Zhou. HALC: Object Hallucination Reduction via Adaptive Focal-Contrast Decoding. 2024

(3) Zhaorun Chen, **Zhuokai Zhao**, Zhihong Zhu, Ruiqi Zhang, Xiang Li, Bhiksha Raj, and Huaxiu Yao. AutoPRM: Automating Procedural Supervision for Multi-Step Reasoning via Controllable Question Decomposition. 2024

(4) **Zhuokai Zhao**, Harish Palani, Tianyi Liu, Lena Evans, and Ruth Toner. Multi-Modality Guidance Network for Missing Modality Inference. 2023

(5) **Zhuokai Zhao**, Yang Yang, Wenjie Hu, and Shuang Yang. Breaking the Curse of Quality Saturation with User-Centric Ranking. In *29th SIGKDD Conference on Knowledge Discovery and Data Mining*, 2023

(6) **Zhuokai Zhao**, Takumi Matsuzawa, William Irvine, Michael Maire, and Gordon L Kindlmann. Evaluating Machine Learning Models with NERO: Non-Equivariance Revealed on Orbits. 2023

(7) Guanlin Wu*, **Zhuokai Zhao**, and Yutao He. RELAX: Reinforcement Learning Enabled 2D-LiDAR Autonomous System for Parsimonious UAVs. 2023

(8) **Zhuokai Zhao**, Takumi Matsuzawa, William Irvine, Michael Maire, and Gordon L Kindlmann. Utilizing Both Past and Future: Multi-Frame Memory Based Network in Solving Particle Image Velocimetry. 2021

(9) **Zhuokai Zhao**, Yao-Jen Chang, Ruhan Sa, Kai Ma, Jianping Wang, Vivek Kumar Singh, Terrence Chen, Andreas Wimmer, and Birgi Tamersoy. System and Method for Assisted Patient Positioning, September 22 2020. US Patent 10,783,655

(10) Francis X Creighton, Mathias Unberath, Tianyu Song, **Zhuokai Zhao**, Mehran Armand, and John Carey. Early Feasibility Studies of Augmented Reality Navigation for Lateral Skull Base Surgery. *Otology & Neurotology*, 41(7):883–888, 2020

Skills

Programming Python (PyTorch, TensorFlow, NumPy, PySide, and etc.), C/C++, SQL (Redshift, Presto), JavaScript (Svelte, React).

Miscellaneous Linux, Git, LaTeX, Shell (Bash/Zsh), CMAKE.