Zhuokai Zhao

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Education

University of Chicago   *Chicago, IL*

Ph.D. in Computer Science. Areas: Multimodal Deep learning; Active Learning; Recommender System;   *2018 - 2024 (expected)*

Johns Hopkins University   *Baltimore, MD*

M.S. in Robotics. Areas: Augmented Reality; Medical Imaging Analysis.   *2016 - 2018*

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

B.S. in Electrical Engineering. Areas: Computer Vision; Robotic Manipulation and Control.   *2013 - 2016*

Work Experience

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

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

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

Meta AI   *Menlo Park, CA*

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

- Proposed *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.

Selected Publications

(1) **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

(2) **Zhuokai Zhao**, Harish Palani, Tianyi Liu, Lena Evans, and Ruth Toner. Multi-Modality Guidance Network for Missing Modality Inference. *arXiv preprint arXiv:2309.03452*, 2023

(3) **Zhuokai Zhao**, Takumi Matsuzawa, William Irvine, Michael Maire, and Gordon L Kindlmann. Evaluating Machine Learning Models with NERO: Non-Equivariance Revealed on Orbits. *arXiv preprint arXiv:2305.19889*, 2023

(4) Guanlin Wu*, **Zhuokai Zhao***, and Yutao He. RELAX: Reinforcement Learning Enabled 2D-LiDAR Autonomous System for Parsimonious UAVs. *arXiv preprint arXiv:2309.08095*, 2023

(5) **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. *Under review*, 2021

(6) **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

Ongoing Projects

Active In-Context Learning in Large Language Models (LLM)   *Chicago, IL*

University of Chicago   *Oct, 2023 - Current*

Direct Acquisition Optimization through Active Testing   *Chicago, IL*

University of Chicago   *Sep, 2023 - Current*

Improved Vision Language Pretraining through Ranking Loss   *Chicago, IL (remote)*

Carnegie Mellon University   *Sep, 2023 - Current*

Mitigating Object Hallucination through Context-aware Contrastive Decoding   *Chicago, IL*

Toyota Technological Institute at Chicago   *Oct, 2023 - Current*

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.