Zihao Lin

CONTACT INFORMATION

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- **Google Scholar:** https://scholar.google.com.sg/citations?user=4h_A4n4AAAAJ&hl=en&oi=ao
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RESEARCH INTERESTS

My research centers on **multimodal understanding and generation**, including **image editing, image generation, and video understanding**, aiming to bridge perception and generation through unified multimodal frameworks. I also explore **RL-trained and LLM/MLLM-based agents**, applying agent frameworks to diverse real-world applications such as design document editing and medical reasoning. My broader interests include **retrieval-augmented generation (RAG)**, **interpretability**, and the development of **efficient, scalable architectures for multimodal intelligence**.

EDUCATION

University of California, Davis, USA   01/2025- Present

- **Major:** Ph.D. in Computer Science | **Advisor:** Dr. Lifu Huang

Virginia Tech, USA (Transferred to UC Davis in 2025)   08/2023-12/2024

- **Major:** Ph.D. in Computer and Information Sciences | **Advisor:** Dr. Lifu Huang

Duke University, USA   08/2020-12/2022

- **Major:** Master of Science in Electrical & Computer Engineering (ECE) | GPA: 3.74/4.0

Southern University of Science and Technology, China   09/2015-07/2019

- **Major:** Financial Mathematics | Major GPA: 3.82/4.0 | Overall GPA: 3.76/4.0

PROFESSIONAL EXPERIENCE

Adobe Research | Research Intern   06/2025-11/2025

- Topic: Multi-layer Transparent-background Design Document Editing
- Mentor: Dr. Wanrong Zhu
- Research paper accepted to NeurIPS 2025 Workshop, **Spotlight paper** (CVPR 2026 under review).

Adobe Research | Research Intern   05/2024-11/2024

- Topic: Personalized question generation for AI assistant
- Mentor: Dr. Zichao (Jack) Wang
- Research paper accepted to NAACL 2025 (Demo Track); US patent pending.
- Developed a persona-based question generation module, now shipped as the "Intuitive Categories" feature in Acrobat AI Assistant (1Q 2025). Designed a scalable synthetic data generation and auto-evaluation framework for Small Language Models, enabling Adobe's first on-device fine-tuned SLM (Acrobat Desktop, 2Q 2025).

Symbiotic Matrix (Shenzhen) Company | Tech Leader (Start-up)   06/2023-09/2023

- Topic: Chinese multi-modal and Large Language Models | Leader: Dr. Lin Zhang (CEO)

International Digital Economy Academy (IDEA) | Research Intern   02/2023-06/2023

- Topic: Chinese multi-modal and Large Language Models | Mentor: Dr. Haiqin Yang

PATENT

- **Suggested Question Generation Using Machine-Learning**
  *Zichao Wang, <u>**Zihao Lin**</u>, Varun Manjunatha, Tong Sun, Jiuxiang Gu, Ryan Rossi*
  U.S. Patent App. No. P13454 (Pending)

PUBLICATIONS – Main Papers

- **MiLDEdit: Reasoning-Based Multi-Layer Design Document Editing**
  <u>***Zihao Lin***</u>*, Wanrong Zhu, Jiuxiang Gu, Jihyung Kil, Christopher Tensmeyer, Lin Zhang, Shilong Liu, Lifu Huang, Vlad I Morariu, Tong Sun*
  NeurIPS 2025 Workshop on Multimodal Algorithmic Reasoning, <u>**spotlight paper**</u> *(CVPR 2026 under review)*

- **Persona-SQ: An end-to-end Framework for Personalized Suggested Questions Generation for Long Documents**
  <u>***Zihao Lin***</u>*, Zichao Wang, Yuanting Pan, Varun Manjunatha, Ryan Rossi, Angela Lau, Lifu Huang, Tong Sun*
  NAACL 2025, Demo Track

- **R2I-Bench: Benchmarking Reasoning-Driven Text-to-Image Generation**
  Kaijie Chen, <u>**Zihao Lin**</u>*, Zhiyang Xu, Ying Shen, Yuguang Yao, Joy Rimchala, Jiaxin Zhang, Lifu Huang*
  EMNLP 2025, <u>***Outstanding Paper Award***</u>

- **A Survey on Explainability for the Inner Mechanism of Multi-Modal Foundation Models**
  <u>***Zihao Lin***</u>*, Samyadeep Basu, Mohammad Beigi, et al, Lifu Huang*
  Preprint, arXiv: 2502.17516 (TMLR Under Review)

- **Navigating the Dual Facets: A Comprehensive Evaluation of Sequential Memory Editing in Large Language Models**
  <u>***Zihao Lin***</u>*, Hongxuan Li, Yufan Zhou, Yuxiang Zhang, Mohammad Beigi, Lifu Huang*
  Proceedings of the 62th Annual Meeting of the Association for Computational Linguistics (ACL'2024)

- **MMedAgent: Learning to Use Medical Tools with Multi-modal Agent**
  Binxu Li, Tiankai Yan, Yuanting Pan, Zhe Xu, Jie Luo, Ruiyang Ji, Shilong Liu, Haoyu Dong,* <u>**Zihao Lin***</u>*, Yixin Wang* (* co-corresponding authors)*
  Conference on Empirical Methods in Natural Language Processing (EMNLP) 2024, Finding

- **Efficient Federated Prompt Tuning for Black-Box Large Pre-trained Models**
  <u>***Zihao Lin****</u>*, Yan Sun*, Yifan Shi, Xueqian Wang, Lifu Huang, Li Shen, Dacheng Tao (*equal contribution)*
  Preprint, arXiv: 2310.03123

- **Rethinking Medical Report Generation: Disease Revealing Enhancement with Knowledge Graph**
  <u>***Zihao Lin****</u>*, Yixin Wang*, Haoyu Dong* (* equal contribution)*
  Proceedings of the 40th International Conference on Machine Learning, Honolulu, Hawaii, USA. PMLR 2023

- **Trust It or Not: Confidence-Guided Automatic Radiology Report Generation**
  <u>***Zihao Lin****</u>*, Yixin Wang*, Zhe Xu, Haoyu Dong, Jiang Tian, Jie Luo, Zhongchao Shi, Lifu Huang, Yang Zhang, Jianping Fan, and Zhiqiang He. (* equal contribution)*
  Neurocomputing, 127374

PUBLICATIONS – Other Papers

- **Large Language Models for Conversational User Simulation: A Comprehensive Survey**
  *Bo Ni, Leyao Wang, Yu Wang, Branislav Kveton, et al., **Zihao Lin**, Trung Bui, Yue Zhao, Tyler Derr, Ryan A Rossi*
  ARR 2025 July, Under Review

- **Localizing Knowledge in Diffusion Transformers**
  *Arman Zarei, Samyadeep Basu, Keivan Rezaei, **Zihao Lin**, Sayan Nag, Soheil Feizi*
  NeurIPS 2025

- **Knowing When to Stop: Dynamic Context Cutoff for Large Language Models**
  *Roy Xie, Junlin Wang, Paul Rosu, Chunyuan Deng, Bolun Sun, **Zihao Lin**, Bhuwan Dhingra*
  NeurIPS 2025

- **RoRA-VLM: Robust Retrieval-Augmented Vision Language Models**
  *Jingyuan Qi, Zhiyang Xu, Rulin Shao, **Zihao Lin**, Yang Chen, Di Jin, Yu Cheng, Qifan Wang, Lifu Huang*
  ICCV 2025, Workshop on Knowledge-Intensive Multimodal Reasoning

- **Rethinking the Uncertainty: A Critical Review and Analysis in the Era of Large Language Models**
  *Mohammad Beigi, Sijia Wang, Ying Shen, **Zihao Lin**, et al, Lifu Huang*
  Preprint, arXiv: 2410.20199

- **Holistic Evaluation for Interleaved Text-and-Image Generation**
  *Minqian Liu, Zhiyang Xu, **Zihao Lin**, Trevor Ashby, Joy Rimchala, Jiaxin Zhang, Lifu Huang*
  Conference on Empirical Methods in Natural Language Processing (EMNLP) 2024

- **InternalInspector: Robust Confidence Estimation in LLMs through Internal States**
  *Mohammad Beigi, Ying Shen, Runing Yang, **Zihao Lin**, et al, Lifu Huang*
  Conference on Empirical Methods in Natural Language Processing (EMNLP) 2024, Finding

- **ToolBeHonest: A Multi-level Hallucination Diagnostic Benchmark for Tool-Augmented LLMs**
  *Yuxiang Zhang, Jing Chen, Junjie Wang, Yaxin Liu, Cheng Yang, **Zihao Lin**, et al,, Hayato Yamana*
  Conference on Empirical Methods in Natural Language Processing (EMNLP) 2024

- **Towards More Suitable Personalization in FL via Decentralized Partial Model Training**
  *Yifan Shi, Yingqi Liu, Yan Sun, **Zihao Lin**, Li Shen, Xueqian Wang, Dacheng Tao*
  Preprint, arXiv: 2305.15157

- **Prompt Tuning based Adapter for Vision-Language Model Adaption**
  *Jingchen Sun, Jiayu Qin, **Zihao Lin**, Changyou Chen.*
  Preprint, arXiv: 2303.15234

- **ACN: Adversarial Co-training Network for Brain Tumor Segmentation with Missing Modalities**
  *Wang Yixin, Yang Zhang, Yang Liu, **Zihao Lin**, et al, Zhiqiang He.*
  MICCAI, 2021.

SERVICES
Reviewer:
- ACL ARR (2024–2025), EMNLP (2024–2025), ICLR (2025–2026), NAACL (2025), COLM (2025)