



Maozheng Zhao

CS PhD at Stony Brook University (Ranked 23 in the US by CSRankings.org)

👤 Expertise

My PhD research focuses on multi-modal human-computer interaction, specifically on combining modalities such as touch, voice, and eye gaze with AI for a more natural and efficient interaction experience on mobile devices. Apart from expertise in HCI, I also have extensive experience with computer vision and LLMs from my previous publications and internships.

★ Available starting date

January 15, 2024 or later. I'll graduate in December 2023.

🎓 Education

Ph.D., Stony Brook University, Stony Brook, USA

August 2016 — Present

Major: Computer Science. Advisor: Prof. Xiaojun Bi. GPA: 3.78

M.S., Beijing University of Posts and Telecommunications, Beijing, China

August 2013 — March 2016

Major: Information and Communication Engineering. GPA: 3.80

B.S., Harbin Engineering University, Harbin, China

August 2009 — July 2013

Major: Electronic and Information Engineering. GPA: 3.58

📁 Internship Experience

Student researcher at Google, Mountain View, CA

December 2022 — May 2023

Enabled Android settings search to understand natural language queries by LLMs. Created a dataset with pairs of natural language queries and answers by prompt engineering using LLMs, fine-tuned the LaMDA LLM with the dataset, evaluated the fine-tuned model with real user queries collected from a user study. The fine-tuned model significantly outperforms traditional search algorithms such as TF-IDF, and sentence encoding.

Research Intern at Google, Mountain View, CA

October 2022 — December 2022

(Same as the Google student researcher project above)

Research Scientist Intern at Meta, Redmond, WA

May 2022 — September 2022

Contact information

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Links

[Personal Webpage](#)

[Linkedin](#)

[Google scholar](#)

Skills

Deep learning with Pytorch or TensorFlow

Android development with Java

iOS development with Swift

Unity development with C#

Reduced users' physical burden during gesture typing in virtual reality by utilizing user's implicit eye gaze. Published a conference paper in IUI 2024 from the intern project.

★ Papers under review

Zhao, Maozheng, Nathan Huang, Rui Liu, Shumin Zhai, I. V. Ramakrishnan and Xiaojun Bi. "Beyond Autocorrect: LLM-based Multi-modal Text Correction on Smartphones with Voice and Touch Input." Submitted at CHI 2024 conference on Human Factors in Computing Systems. ([Project webpage](#))

★ Selected Publications

[1] **Zhao, Maozheng**, Wenzhe Cui, I. V. Ramakrishnan, Shumin Zhai, and Xiaojun Bi. "Voice and Touch Based Error-tolerant Multimodal Text Editing and Correction for Smartphones." In *The 34th Annual ACM Symposium on User Interface Software and Technology (UIST)*, pp. 162-178. 2021. ([Project webpage](#))

[2] **Zhao, Maozheng**, Henry Huang, Zhi Li, Rui Liu, Wenzhe Cui, Kajal Toshniwal, Ananya Goel et al. "EyeSayCorrect: Eye Gaze and Voice Based Hands-free Text Correction for Mobile Devices." In *27th International Conference on Intelligent User Interfaces (IUI)*, pp. 470-482. 2022. ([Project webpage](#))

[3] **Zhao, Maozheng**, Alec M. Pierce, Ran Tan, Ting Zhang, Tianyi Wang, Tanya R. Jonker, Hrvoje Benko, and Aakar Gupta. "Gaze Speedup: Eye Gaze Assisted Gesture Typing in Virtual Reality." In *Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI)*, pp. 595-606. 2023. ([Project webpage](#))

[4] Li, Zhi, **Maozheng Zhao**, Dibyendu Das, Hang Zhao, Yan Ma, Wanyu Liu, Michel Beaudouin-Lafon, Fusheng Wang, Iv Ramakrishnan, and Xiaojun Bi. "Select or Suggest? Reinforcement Learning-based Method for High-Accuracy Target Selection on Touchscreens." In *CHI Conference on Human Factors in Computing Systems (CHI)*, pp. 1-15. 2022.

[5] Li, Zhi, **Maozheng Zhao**, Yifan Wang, Sina Rashidian, Furqan Baig, Rui Liu, Wanyu Liu et al. "BayesGaze: A Bayesian Approach to Eye-Gaze Based Target Selection." In *Proceedings. Graphics Interface (GI)*, vol. 2021, p. 231. NIH Public Access, 2021.

[6] Nguyen, Vu, Tomas F. Yago Vicente, **Maozheng Zhao**, Minh Hoai, and Dimitris Samaras. "Shadow detection with conditional generative adversarial networks." In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pp. 4510-4518. 2017.

[7] Fassler, Danielle J., et al. "Deep learning-based image analysis methods for brightfield-acquired multiplex immunohistochemistry images." *Diagnostic pathology* 15.1 (2020): 1-11.

- [8] **Zhao, Maozheng**, Le Hou, Han Le, Dimitris Samaras, Nebojsa Jojic, Danielle Fassler, Tahsin Kurc et al. "Label Super Resolution with Inter-Instance Loss." *arXiv preprint arXiv:1904.04429* (2019).
- [9] **Zhao, Maozheng**, Qin Tu, Yanping Lu, Yongyu Chang, and Bo Yang. "No-reference image quality assessment based on phase congruency and spectral entropies." In *2015 Picture Coding Symposium (PCS)*, pp. 302-306. IEEE, 2015.
- [10] Liu, Jun, Ran Gao, Maozheng Zhao, Yanping Lu, and Aidong Men. "Video saliency detection based on mutual information and background prior in compressed domain." In *2015 IEEE/CIC International Conference on Communications in China (ICCC)*, pp. 1-6. IEEE, 2015.
- [11] Lu, Yanping, et al. "Gradient magnitude similarity for tone-mapped image quality assessment." *2015 Visual Communications and Image Processing (VCIP)*. IEEE, 2015.
- [12] Mu, Linlin, **Maozheng Zhao**, and Chaozhu Zhang. "Quantum particle swarm optimisation based on chaotic mutation for automatic parameters determination of pulse coupled neural network." *International Journal of Computing Science and Mathematics* 4.4 (2013): 354-362.

★ Teaching Experience

Teaching Assistance

CSE323 Human-computer Interaction

CSE214 Data Structures

CSE215 Foundations of Computer Science.