Jitian Zhao

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Education

University of Wisconsin-Madison — Madison, WI
Ph.D. in Statistics; GPA: 3.91 — *Sep. 2020 – Present*
Master of Science in Data Science; GPA: 4.00 — *Aug. 2019 – May. 2020*
Visiting Student; GPA: 4.00 — *Aug. 2018 – May. 2019*

Zhejiang University — Hangzhou, China
Bachelor of Science in Statistics; GPA: 3.71 — *Aug. 2015 – Jun. 2019*

Work Experience

Meta — New York, NY
Machine Learning Engineer Intern — *May 2024 - Aug 2024*

- **Unified typeahead ranker for Meta AI suggestions and keywords:** Introduced a unified typeahead ranking system for Meta AI suggestions, enhancing user interaction.Improved Instagram Meta AI click-through rate by 82%, daily active users by 21%, and reduced bounce rate by 2%, with the highest impact observed at the time.
- **Introduction of new features into Meta AI typeahead ranker:** Introduced Meta AI engagement based features to the typeahead ranker, including complex query-doc top object features. Expanded feature coverage through leveraging KNN via text embeddings. Increased Meta AI click-through rate by 8% and daily active users by 3%, achieving 80% of the team's quarter goal.
- **User Search Query Reformulation Analysis:** Led an in-depth study on user reformulation for Meta AI search. Discovered most users who reformulated had a high media search intent. Conclusions helped unblocked other launches, also helped other work-streams leveraging the reformulation data.

Amazon AGI — Bellevue, WA
Applied Scientist Intern — *May 2023 - Aug 2023*

- **Multimodal vector search system:** Designed and implemented a vector search system efficiently retrieves multimodal data include texts, images, and videos. Conducted comprehensive evaluation on embedding models, assessed effectiveness of indexing methods and indexing platforms. Built an interactive API capable of searching million-level database in milliseconds.
- **LLM-augmented search system:** Developed a two-stage search method incorporating LLM to facilitate searches based on user-defined metrics and semantic relevance. Experimented with large language models on prompt engineering, model finetuning and structure editing. Designed human feedback mechanism for system updates.

Amazon Alexa AI — Bellevue, WA
Applied scientist intern — *May 2022 - Sep 2022*

- **Cascading multi-task language model:** Proposed a novel transformer-based cascading multi-task learning framework for intent detection and slot filling. Increased accuracy by 30% over traditional MTL language models in easy-to-hard cascading dataset. Extended the proposed framework to multi-task problem with complicated task dependencies.
- **Applications:** Improved labeling efficiency using Cascade MTL model with adaptive label hints based on previous task label selection. Increased labeling accuracy with high-quality model predictions.

Publications

- C. Shin, **J. Zhao**, S. Cromp, H. Vishwakarma, and F. Sala, "OTTER: Effortless Label Distribution Adaptation of Zero-shot Models," *in ICML Workshop: Foundation Models in the Wild, 2024.*
- W. Tan, N. Roberts, T.-H. Huang, **J. Zhao**, J. Cooper, S. Guo, C. Duan, and F. Sala, "MoRe Fine-Tuning with 10x Fewer Parameters," *in ICML 2024 Workshop: Efficient Systems for Foundation Models II, 2024.*
- N. Roberts, X. Li, D. Adila, S. Cromp, T. Huang, **J. Zhao**, and F. Sala, "Geometry-Aware Adaptation for Pretrained Models," *in Neural Information Processing Systems (NeurIPS), 2023.*
- S. Raschka, **J. Zhao**. Chapter 16: Transformers–Improving Natural Language Processing with Attention Mechanisms, Machine Learning with PyTorch and Scikit-Learn. Birmingham, UK: Packt Publishing, 2022. ISBN: 978-1801819312

Programming Skills

- **Software:** Proficient in Python, R and SQL, experienced Matlab and C
- **Packages:** Pytorch, Transformers, Networkx, Geomstats, Pandas, Numpy