

# HANSI ZENG

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[Homepage](#) ◊ [Github](#)

## EDUCATION

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<b>University of Massachusetts Amherst</b> Major in Computer Science	<b>PhD</b> 09/2021-
<b>University of Utah</b> Major in Computer Science	<b>Master</b> 09/2019-06/20021
<b>University of Wisconsin Madison</b> Major in Mathematics	<b>Master</b> 09/2017-06/2019
<b>Nankai University, China</b> Major in Mathematics	<b>Bachelor</b> 09/2014-06/2018

## RESEARCH TOPICS

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Dense Retrieval, Neural Ranking, Recommender System, Natural Language Processing.

## PROFESSIONAL EXPERIENCES

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- **Google DeepMind**, Mountain View, CA. 05/2024 - 12/2024  
*Student Research Intern, advised by Kai Hui*
- **Amazon**, Palo Alto, CA. 05/2023 - 12/2023  
*Applied Scientist Intern, advised by Chen Luo*
- **Lowe's**, Charlotte, NC. 05/2022 - 08/2022  
*Research Intern, advised by Surya Kallumadi*

## PUBLICATIONS

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- Zhenrui Yue, Honglei Zhuang, Aijun Bai, Kai Hui, Rolf Jagerman, **Hansi Zeng**, Zhen Qin, Dong Wang, Xuanhui Wang, Michael Bendersky. Inference Scaling for Long-Context Retrieval Augmented Generation. (Under review)
- Bowen Jin, **Hansi Zeng**, Guoyin Wang, Xiusi Chen, Tianxin Wei, Ruirui Li et al. Language Models as Semantic Indexers. *The Forty-first International Conference on Machine Learning (ICML'24)*.
- **Hansi Zeng**, Chen Luo, Hamed Zamani. Planning Ahead in Generative Retrieval: Guiding Autoregressive Generation through Simultaneous Decoding. *Proceedings of the 47th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'24)*.
- **Hansi Zeng**, Chen Luo, Bowen Jin, Sheikh Muhammad Sarwar, Tianxin Wei, Hamed Zamani. Scalable and Effective Generative Information Retrieval. *Proceedings of the ACM on Web Conference 2024 (WWW'2024)*.
- Tianxin Wei, Bowen Jin, Ruirui Li, **Hansi Zeng**, Zhengyang Wang, Jianhui Sun, Qingyu Yin, Hanqing Lu, Suhang Wang, Jingrui He, Xianfeng Tang. Towards Unified Multi-Modal Personalization: Large Vision-Language Models for Generative Recommendation and Beyond. *The Twelfth International Conference on Learning Representations (ICLR'24)*.

- Zhiqi Huang, **Hansi Zeng**, Hamed Zamani, James Allen. Soft Prompt Decoding for Multilingual Dense Retrieval. *Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'23)*.
- **Hansi Zeng**, Surya, Kallumadi, Zaid Alibadi, Rodrigo Nogueira, Hamed Zamani. A Personalized Dense Retrieval Framework for Unified Information Access. *Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'23)*.
- Zhichao Xu, **Hansi Zeng**, Juntao Tan, Zuohui Fu, Yongfeng Zhang, Qingyao Ai. A Reusable Model-agnostic Framework for Faithfully Explainable Recommendation and System Scrutability. *ACM Transactions on Information Systems (TOIS)*.
- 🏆 **Hansi Zeng**, Hamed Zamani, Vishwa Vinay,. Curriculum Learning for Dense Retrieval Distillation. In *Proceedings of the 45th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR'22)*. **Best Short Paper Award**
- **Hansi Zeng**, Zhichao Xu, Qingyao Ai. A Zero Attentive Relevance Matching Network for Review Modeling in Recommender System. In *Proceedings of the 41st European Conference on Information Retrieval (ECIR'21)*, oral presentation, Lucca, Italy, March 28-April 1, 2021.
- Zhichao Xu, **Hansi Zeng**, Qingyao Ai. Understanding the Effectiveness of Reviews in E-commerce Top-N Recommendation. In *Proceedings of the 7th ACM International Conference on the Theory of Information Retrieval (ICTIR'21)*, Virtual, July 11, 2021.

## PROJECTS

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**Toolbox for E-commerce Product Search** [github repo](#) 09/2019-12/2020  
*Independent Study, advised by Professor Qingyao Ai, School of Computing, University of Utah*

- Build a toolbox for e-commerce product search followed by several software design patterns like **abstract factory pattern** to keep the code simplicity, extensibility and readability.
- The toolbox implements several state-of-art models by **TensorFlow** with thorough hyperparameter tuning and performance comparison.
- The main techniques used in the models are **doc2vec**, **attention network**, **knowledge graph embedding**.

**Toolbox for Text Semantic Matching** [github repo](#) 04/2020-Present  
*Extracurricular Activity*

- Implement several state-of-art text semantic matching models like **RE2**, **CAFE**, **ESIM** using **Pytorch** with performance comparison.
- Organize the the toolbox for easy training, hyperparameter tuning and model extension.

**Toolbox for Review-Based Recommendation System** [github repo](#) 05/2020-Present  
*Extracurricular Activity*

- Implement several state-of-art for review-based recommendation systems like **NARRE**, **DeepCoNN** using **Pytorch** with hyperparameter tuning and performance comparison.
- Organize the the toolbox for easy training, hyperparameter tuning and model extension.
- Severed as strong baselines for our new proposed model on research.

**Comparative Study of Reinforcement Learning-based and Traditional Motion Planning Algorithms** [presentation](#) 09/2020-12/2020  
*Course project, advised by Alan Kuntz, School of Computing and the Robotics Center, University of Utah*

- Design the simulation environment based on **racecarGymEnv** from the pybullet to compare the performance between traditional motion planning algorithms and reinforcement learning algorithms.
- Implement **RRT**(Rapidly-exploring random tree), **DQN**, **Reinforce**, **PPO**, and compare their training time, inference time, time to reach the goal in different environment settings.

## TEACHING EXPERIENCES

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- Teaching Assistant of ECE 3530 Engineering Probability and Statistics Fall 2020, UoU

## SKILLS

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**Computer Languages** Python/Java/R/C++/JavaScript/MATLAB/Linux/Unix/**TensorFlow/Pytorch**  
**GRE** Verbal:153, Quantitative:168, Analytical Writing: 3.0

## AWARDS

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Second-class Scholarship, Nankai University 2015-2016  
University Student Table Tennis Team Competition in Tianjin(ranked 3rd of 21 universities) 2016