JINMING NIAN

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SUMMARY

Third-year PhD candidate specializing in Information Retrieval, Recommendation Systems, NLP, and LLM Agents. Experienced in scientific programming with Python and PyTorch, with additional expertise in software development, cloud computing, and distributed systems. Actively publishing research in top-tier conferences on retrieval and LLM-driven methods.

EDUCATION

Santa Clara University

Ph.D. in Computer Science and Engineering — *September 2023 – June 2028 (Expected)*

Advisor: **Prof. Yi Fang**

M.S. in Computer Science and Engineering — *September 2021 – June 2023*

Relevant Courses: Machine Learning, Deep Learning, Information Retrieval, Natural Language Processing, Reinforcement Learning

University of California, Davis — *September 2017 – June 2021*

B.S. in Physics, Minor in Music

WORK EXPERIENCE

Data Scientist Intern, Amazon — *June 2025 - September 2025*

- Fine-tuned a decoder-only LLM on sub-terabyte scale historical tabular shipment data to forecast Amazon fulfillment center shipment attributes (timing and volume) during high-volume events such as Prime Day and Black Friday
- Improved SLAM-to-promise time prediction, reducing WAPE from 48.49% to 17.51% at a major Seattle fulfillment center
- Validated the approach's robustness and scalability across multiple fulfillment centers and temporal settings

Research Assistant, Santa Clara University — *April 2023 - Present*

- Evaluated the reranking effectiveness of LLMs based on their likelihood of generating correct answers for a given query and diverse document contexts, producing a synthetic dataset with quality comparable to human labels for training dense retrievers
- Developed methods using LLMs to generate controlled hallucinations from news articles, creating highly relevant questions that ask for information absent in the document, mimicking RAG scenarios where the retrieved document is unfit for the question
- Developed web-based tools to facilitate human annotation, results aggregation, and inter-annotator agreement calculations

PUBLICATIONS

- **W-RAG: Weakly Supervised Dense Retrieval in RAG for Open-domain Question Answering**

ACM SIGIR ICTIR 2025 – paper, code

Jinming Nian, Zhiyuan Peng, Qifan Wang, Yi Fang

- **ELOQ: Resources for Enhancing LLM Detection of Out-of-Scope Questions**

ACM SIGIR Resource & Reproducibility Track 2025 – paper, code, dataset

Zhiyuan Peng*, **Jinming Nian***, Alexandre Evfimievski, Yi Fang

- **Does Reasoning Introduce Bias? A Study of Social Bias Evaluation and Mitigation in LLM Reasoning**

EMNLP 2025 (Findings) – paper

Xuyang Wu*, **Jinming Nian***, Ting-Ruen Wei*, Zhiqiang Tao, Hsin-Tai Wu, Yi Fang

PROJECTS

DeepSeek R1-Zero for Reasoning Intensive Passage Re-ranking — *February 2025 - Present*

- Gathered training data: filtered hard queries where both lexical and dense retrieval methods fail; collected irrelevant documents that are consistently retrieved by strong retrievers as hard negative documents
- Redesigned reward modeling based on GRPO for the re-ranking task to encourage self-discovered CoT
- Leveraged Huggingface's Open-R1 as the base framework to train, test, and evaluate on the challenging BRIGHT dataset