ASHLEY SHIN

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interests: information retrieval, recommender systems, NLP, Machine Learning, HCI, ethics

EDUCATION

PhD in Computer Science University of California, San Diego 2024 – present
Advisor: Julian McAuley

BA in Philosophy University of California, Santa Barbara 2022

EXPERIENCE

Research Fellow National Library of Medicine, National Institutes of Health (NIH) 2022 – 2024
Advisors: Qiao Jin, Zhiyong Lu
Research spanning biomedical NLP and information retrieval, aimed at improving PubMed, a search engine used by 7 million researchers. Projects involved dense retrieval with text encoders trained on large scale user click logs.

HONORS

NSF Graduate Fellowship CSGrad4US, 2023 cohort. Selected based on demonstrated potential in pursuing a doctorate in a CISE field. $159k in total funding.

Top 3, BioASQ Challenge[1] 2023 Represented NCBI/NLM at BioASQ, document retrieval subtask. First postbac fellow to lead NLM team at BioASQ. Past NLM participants were postdocs and staff scientists.

NIH Intramural Research Training Award Selected for postbaccalaureate training in biomedical research at the National Institutes of Health

PUBLICATIONS

[1] Yupeng Hou, Jiacheng Li, **Ashley Shin**, Jinsung Jeon, Abishek Santhanam, Wei Shao, Kaveh Hassani, Ning Yao, Julian McAuley. Generating Long Semantic IDs in Parallel for Recommendation. *ACM KDD 2025.* [link]

[2] **Ashley Shin**, Qiao Jin, Zhiyong Lu. Harnessing PubMed User Query Logs for Post Hoc Explanations of Recommended Similar Articles. *Preprint 2024.* [link]

[3] **Ashley Shin**, Qiao Jin, Zhiyong Lu. Multi-stage Literature Retrieval System Trained by PubMed Search Logs for Biomedical Question Answering. *CLEF (BioASQ workshop) 2023.* [link]

[4] Qiao Jin, **Ashley Shin**, Zhiyong Lu. LADER: Log-Augmented DEnse Retrieval for Biomedical Literature Search. *ACM SIGIR (Information Retrieval) 2023.* [link]

PROJECTS

Multi-Stage Document Retrieval System Implemented system that uses a bi-encoder for retrieval and a cross-encoder model for reranking. Models trained with 255M query-article pairs, constructed from PubMed user search logs. *Pytorch, Hugging Face, FAISS, Numpy, Pandas.* Led to [3]

Pubmed Log-Augmented Sparse Retriever Implemented log-augmented sparse retrieval baseline with BM25 as part of LADER ablation study. 35M documents indexed/searched. *Pyserini/Lucene, Numpy, Pandas.* Led to [4]

BearMaps Wrote the backend for a Google Maps-like web application, with scrolling and zoom in/out for the city of Berkeley, CA. Implemented fastest route with K-D trees and A* Search Algorithm. *Java, Apache Maven, Junit*

SKILLS

Languages Python, Java, C++
Libraries Pytorch, Hugging Face Transformers
Tools Git, CUDA

[1] BioASQ Biomedical Semantic Question Answering Challenge. Past participants include Google Research, UCSD, U. Mass.