HY (GIA) DANG

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RESEARCH INTERESTS

Information Retrieval: Search and ranking, natural language processing for information retrieval, large language models (LLMs) for information retrieval.

Natural Language Processing Applications: Automated fact-checking systems, retrieval-augmented generation (RAG), factuality in LLMs.

EDUCATION

University of Notre Dame, Notre Dame, IN *August 2022 - Present*
Ph.D. student in Computer Science and Engineering *GPA: 3.958*
Advisor: Dr. Meng Jiang

Texas Christian University, Fort Worth, TX *August 2017 - December 2021*
B.S. in Computer Science *GPA: 4.0*
B.S. in Mathematics *Departmental Honors*

WORK EXPERIENCE

Amazon *Palo Alto, CA*
Applied Scientist Intern *September 2024 - Present*

- Evaluating the Tool Using and Function Calling Capabilities of Language Models

RESEARCH PROJECTS

Factuality In The Wild & Retrieval-Augmented Generation Systems
April 2024 - Present

- Working on improving automated fact-checking systems, especially for claims in the wild.

- Addressing the factuality and hallucination problems of LLMs, focusing on RAG systems.

- Broad impact: Creating a significant impact by enforcing and improving the factual accuracy of information, with applications in both automated fact-checking and verifying, correcting the factuality of LLMs' generations.

Information Retrieval Enhancement Using Text Expansion Techniques
August 2022 - April 2024

- Methods: Developing methods to utilize large language models (LLMs) to expand queries, emphasizing diverse expansions to consider multiple aspects of given queries.

- Broad impact: Creating a significant impact by developing a real-world system that utilizes these techniques to enhance information retrieval frameworks, question-answering systems, and intelligent assistants.

HONORS AND AWARDS

Best Presentation Award, Notre Dame Data Mining Lab, Spring 2023, Spring 2024

Student Research Symposium Best Poster Award, TCU, Spring 2021

Science and Engineering Research Center Grant, TCU, Fall 2019

Academic Achievement Award, TCU, May 2018

CONFERENCE PAPERS

2. **H. Dang**, M. Nguyen, B. Mei. StTime-Net: Combining both Historical and Textual Factors for Stock Movement Prediction, in Proceedings of *International Conference on Artificial Neural Networks (ICANN)*, Bristol, UK, 2022

1. Q. Truong, M. Nguyen, **H. Dang**, B. Mei. Housing price prediction via improved machine learning techniques, *Precedia Computer Science 174, 433-442*

WORKSHOP PAPERS

2. **H.Dang***, B. Nguyen*, N. Ziems, M. Jiang. Embedding Mental Health Discourse for Community Recommendation. *4th Workshop on Computational Approaches to Discourse, joint with The 61st Annual Meeting of the Association for Computational Linguistics, Toronto, Canada, 2023.*

1. M. Jiang, **H. Dang**, L. Tong. A Quantitative Review on Language Model Efficiency Research. *Large Language Model Symposium in conjunction with International Joint Conference on Artificial Intelligence (IJCAI), 2023.*

POSTERS

4. **H. Dang**. Wound Healing Modeling Using Partial Differential Equations And Deep Learning. *Presentation at National Collegiate Research Conference (NCRC)*, Harvard University. 2022

3. **H. Dang**, L. Mantilla, S. Zhang, A. Borum. Bifurcations of an elastic ring with interacting particles, *Student Talk/Poster Session Presentation at the Canadian Undergraduate Mathematics Conference (CUMC)*, Western University, 2020

2. **H. Dang**. Wound Healing Modeling Using Partial Differential Equations And Deep Learning, *Poster Presentation at the 3rd Annual Meeting of the SIAM Texas-Louisiana Section.*, Texas A&M University, 2020

1. **H. Dang**. Wound Healing Modeling Using Partial Differential Equations And Deep Learning, *Student Talk at the Sixteenth Annual Texas Undergraduate Mathematics Conference (TUMC)*, 2021

SERVICE

Teaching Assistant at University of Notre Dame: CSE 20110: Discrete Mathematics - Fall 2022, CSE 40171: AI and Society - Spring 2023
Reviewer: TKDE 2023, KnowledgeNLP-KDD'23, ICWSM 2024, ICWSM 2025, ARR Review.