

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: Retrieval-augmented generation (RAG), tool-augmented language model(s) (TALM), factuality in LLMs, reinforcement learning.

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*

INDUSTRY EXPERIENCE

Amazon *Palo Alto, CA*
Applied Scientist Intern (Team Rufus) *September 2024 - May 2025*

- **Project:** Improving the Tool Using and Function Calling Capabilities of LLM(s)
- **Mentors:** Dr. Tianyi Liu, Dr. Zhuofeng Wu, Jingfeng Yang, Dr. Haoming Jiang

RESEARCH PROJECTS

Knowledge Augmented & Tool-Use LLM(s) *September 2024 - present*

- Working on tool-use capabilities of LLM(s).

Factuality In The Wild & Retrieval-Augmented Generation *April 2024 - September 2024*

- Improving automated fact-checking systems, especially for claims in the wild.

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

- Improving diversity in query expansion in document retrieval.

PUBLICATIONS

4. **Hy Dang**, Tianyi Liu, Zhuofeng Wu, Jingfeng Yang, Haoming Jiang, Tao Yang, Pei Chen, Zhengyang Wang, Helen Wang, Huasheng Li, Bing Yin, Meng Jiang. *Improving Large Language Models Function Calling and Interpretability via Guided-Structured Templates*. The Conference on Empirical Methods in Natural Language Processing (EMNLP 2025).
3. Yining Lu, Noah Ziems, **Hy Dang**, and Meng Jiang. *Optimizing Decomposition for Optimal Claim Verification*. Annual Meeting of the Association for Computational Linguistics (ACL 2025).
2. **Hy Dang**, Minh Nguyen, Bo 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. Quang Truong, Minh Nguyen, **Hy Dang**, Bo Mei. Housing price prediction via improved machine learning techniques, *Procedia Computer Science* 174, 433-442

WORKSHOP PAPERS (* INDICATES EQUAL CONTRIBUTIONS)

2. **Hy Dang***, Bang Nguyen*, Noah Ziems, Meng 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 (ACL 2023).
1. Meng Jiang, **Hy Dang**, Lingbo Tong. *A Quantitative Review on Language Model Efficiency Research*. LLM Symposium in conjunction with International Joint Conference on Artificial Intelligence (IJCAI 2023).

PRESENTATIONS

5. **Hy Dang**, Mengxia Yu, Meng Jiang. *Improving Diversity of Query Expansion in Document Retrieval*. Midwest Speech and Language Days (MSLD 2025).
4. **Hy Dang**. *Wound Healing Modeling Using Partial Differential Equations And Deep Learning*. Presentation at National Collegiate Research Conference (NCRC 2022).
3. **Hy Dang**, Luis Mantilla, S. Zhang, Andy Borum. *Bifurcations of an elastic ring with interacting particles*, Student Talk/Poster Session Presentation at the Canadian Undergraduate Mathematics Conference (CUMC 2020).
2. **Hy Dang**. *Wound Healing Modeling Using Partial Differential Equations And Deep Learning*, Poster Presentation at the 3rd Annual Meeting of the SIAM Texas-Louisiana Section, 2020.
1. **Hy Dang**. *Wound Healing Modeling Using Partial Differential Equations And Deep Learning*, Sixteenth Annual Texas Undergraduate Mathematics Conference (TUMC 2021).

AWARDS & FUNDINGS

OpenAI Researcher Access Program	OpenAI
Award Amount: 10,000 in OpenAI API credits	January 2025 - July 2025
Best Presentation Award	Notre Dame Data Mining Lab
Presentation Title: Expansion is all you need	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

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.