ALIMOHAMMAD BEIGI

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Research Focus: The goal of my research is to develop robust and resource efficient methods that enhance the trustworthiness of NLP applications. With this broad research goal in mind, my work primarily focuses on (i) integrating LLMs into causal feature selection to improve causal feature discovery, (ii) leveraging LLMs to perform human-intensive tasks in machine learning pipelines such as fact-checking, and (iii) model attribution of AI-generated content through representation learning and domain generalization.

EDUCATION

Ira A. Fulton School of Engineering, Arizona State University *Aug. 2022 – Feb. 2027 (Expected)*
Ph.D. Student in Computer Science GPA: 4.0/4.0
Advised by *Dr. Huan Liu*

Shahid Beheshti University, Tehran, Iran *Sept. 2020 – Aug. 2022*
M.Sc. in Computer Science GPA: 4.0/4.0
Thesis: Development of a Sequential Recommender System by BERT

University of Tehran, Tehran, Iran *Sept. 2015 – Feb. 2020*
B.Sc. in Mathematics and Applications GPA: 3.51/4.00

RELEVANT RESEARCH EXPERIENCE

Ph.D. Graduate Research Associate - ASU *2022-Present*
Advised by *Dr. Huan Liu*

- **Causal Discovery and Real-World Interventions**

  - Leveraged LLMs as heuristics in local causal discovery to recover cause–effect relations, clarify ambiguous dependencies, and guide data-driven inference.

  - Designed an interventional disaster assessment system based on causal graphs to support scenario simulation, causal attribution scoring, and practical counterfactual strategies.

- **Fact-Checking and Source Detection in the Era of LLMs**

  - Developed a multimodal framework showing that LLMs can ask relevant fact-checking questions, and that answering them with RAG over online data boosts accuracy and F1 up to 10% on MMFakeBench.

  - Established a supervised contrastive learning and domain generalization approach that led to a 7% accuracy gain in distinguishing human-written text from LLM-generated text and identifying the source model.

M.Sc. Graduate Research Associate - SBU *2020-2022*
Advised by *Dr. Ali Katanforoush*

- **Deep Learning and Reinforcement Learning for Recommender Systems**

  - Redesigned the Transformer architecture by enhancing its Self-Attention layer, improving the efficiency and accuracy of a BERT-based sequential recommender system by 13%.

  - Deployed a self-supervised reinforcement learning system for recommender models, integrating Self-supervised Q-Networks (SQN) with Soft Actor-Critic (SAC) to improve accuracy.

TECHNICAL STRENGTHS

- **Programming Languages:** Python, C/C++, JAVA, JavaScript, MATLAB, Assembly, CodeVision.
- **Tools & Technologies:** PyTorch, Huggingface, Sklearn, Pandas, Numpy, Jupyter, Docker, NetworkX, Snscrape, MySQL, AWS, GCP.

SELECTED PUBLICATIONS & PREPRINTS (🎓 Google Scholar)

Can LLMs Improve Multimodal Fact-Checking by Asking Relevant Questions? *Under Review*
Alimohammad Beigi, Bohan Jiang, Dawei Li, Zhen Tan, Pouya Shaeri, Tharindu Kumarage, Amrita Bhattacharjee, Huan Liu. (*Submitted to IEEE BigData 2025*)

FediverseSharing: A Novel Dataset on Cross-Platform Interaction Dynamics between Threads and Mastodon Users. ***Best Paper Award*** at *ASONAM 2025*
Ujun Jeong, **Alimohammad Beigi**, Anique Tahir, Susan Xu Tang, H Russell Bernard, Huan Liu.

An Interventional Approach to Real-Time Disaster Assessment via Causal Attribution. *CIKM 2025*
Saketh Vishnubhatla, **Alimohammad Beigi**, Rui Heng Foo, Umang Goel, Ujun Jeong, Bohan Jiang, Adrienne Raglin, Huan Liu.

Can Typos Cause Harm? The Impact of Imperfect Input on LLM Safety. *SBP-BRiMS 2025*
Saurabh Zinjad, Amrita Bhattacharjee, **Alimohammad Beigi**, Huan Liu.

From Generation to Judgment: Opportunities and Challenges of LLM-as-a-judge. *EMNLP 2025 Main*
Dawei Li, Bohan Jiang, L. Huang, **Alimohammad Beigi**, Chengshuai Zhao, Zhen Tan, et al.

Large Language Models for Data Annotation: A Survey. *EMNLP 2025 Main*
Zhen Tan, Dawei Li, Song Wang, **Alimohammad Beigi**, Bohan Jiang, Amrita Bhattacharjee, Mansooreh Karami, Jundong Li, Lu Cheng, Huan Liu

Model Attribution in LLM-Generated Disinformation: A Domain Generalization Approach with Supervised Contrastive Learning. *DSAA 2024*
Alimohammad Beigi, Zhen Tan, Nivedh Mudiam, Canyu Chen, Kai Shu, Huan Liu.

HONORS & AWARDS

Travel Awards (Various Venues): SBP-BRiMS'25, SCAI'25, IEEE DSAA'24, SCAI'24, GPSA'24

ACADEMIC SERVICE & TEACHING

Reviewer:
- **ICDM 2025:** IEEE International Conference on Data Mining, **WSDM 2024:** ACM Web Search and Data Mining, **SDM 2024:** SIAM International Conference on Data Mining, **AAAI 2024**, **SBP-BRiMS 2023**.

Mentorship Service:
- Rui Heng Foo (Master's student), Arizona State University. *Fall 2025 - Present*
- Nivedh Mudiam (Undergraduate student), Arizona State University. *Fall 2024 - Fall 2025*

Project Coordinator & Invited Lecturer: CSE 472
Course: Social Media Mining; Instructor: Dr. Huan Liu
- Designed and Developed projects on applying LLMs to social media analysis. Delivered invited lectures covering core course topics and applications.

Instructor: Ira A. Fulton Schools of Engineering, ASU:
FSE 100 - Introduction to Engineering. *Fall 2022, 2023*
- Taught and mentored over 150 first-year undergraduate students. Supervised hands-on projects, including building and programming autonomous LEGO EV3 sensor-based cars in MATLAB to navigate a maze.

Graduate Teaching Assistant: School of CS & AI, ASU:
CSE 472 - Social Media Mining by Dr. Huan Liu *Fall 2023, 2024, 2025*
- Conducted labs, designed course materials, offered guidance on solving assignments, proctored exams.
CSE 511 - Data Processing at Scale by Dr. Satya Parupudi *Spring 2025*
- Offered guidance on solving assignments, proctored exams and graded assignments.