Elham Aghakhani

ea664@drexel.edu Philadelphia, PA http://elhamaghakhani.github.io elham-aghakhani
elhamaghakhani

Summary

PhD student in Information Science at Drexel University with strong foundations in NLP, Computational Social Science, and Human-Centered AI. Research focuses on applying Large Language Models to social issues such as stigma, mental health, and media framing. Published in EMNLP, ACL, and WebSci. Seeking to advance the social impact of NLP through interdisciplinary research at the intersection of language, society, and technology.

Research Interests

- Natural Language Processing
- Computational Social Science
- Large Language Models for Social Impact
- Human-Centered AI

Education

PhD **Drexel University**, Information Science — Philadelphia, PA — Jan 2024 – Present
- **Coursework:** Foundations of Human-centered Computing, Qualitative Research Methods, Quantitative Research Methods, Data Science

MS **K. N. Toosi University of Technology**, Computer Science — Tehran, Iran — Oct 2020 – Sep 2023
- **Thesis:** Automatic Text Summarization using Pre-trained Language Models and Reinforcement Learning
- **Coursework:** Machine Learning, Pattern Recognition, Big Data Analysis, Reinforcement Learning

BS **K. N. Toosi University of Technology**, Computer Science — Tehran, Iran — Sep 2015 – Sep 2019
- **Thesis:** Implementing an Automatic System to Collect News from News Agencies

Publications

Peer-Reviewed Conference Papers

– Bouzoubaa L, **Aghakhani E**, Rezapour R. (2024). Words Matter: Reducing Stigma in Online Conversations about Substance Use with Large Language Models. **EMNLP 2024**.
Developed methods to detect and reframe stigmatizing content on social media.

– Bouzoubaa L, **Aghakhani E**, Song M, Trinh M, Rezapour R. (2024). Decoding the Narratives: Analyzing Personal Drug Experiences Shared on Reddit. **ACL Findings 2024**.
Built classifiers to detect and categorize narratives of substance use shared on Reddit.

– Namvarpour M*, **Aghakhani E***, Ekstrand MD, Rezapour R, Razi A. (2025). *The Evolving Landscape of Youth Online Safety: Insights from News Media Analysis*. **WebSci'25**.
Analyzed media framing patterns on youth online safety across major news agencies.
**Equal contribution*

Preprints / Under Review

– **Aghakhani E**, Wang L, Washington KT, Demiris G, Huh-Yoo J, Rezapour R. (2025). From Conversation to Automation: Leveraging Large Language Models to Analyze Strategies in Problem Solving Therapy. *arXiv:2501.06101* (Under Review at ACL).
Automate analyzing therapeutic strategies in mental health sessions.

Experience

Drexel University, Research Assistant — Philadelphia, PA, Jan 2024 – Present

- Developed LLM-based methods to reduce stigmatizing language in online drug-related discourse. *Published at EMNLP 2024*.
- Built classification models to categorize Reddit posts about Substance Use Disorder (SUD). *Published in ACL 2024 Findings*.
- Led analysis of therapist–patient dialogues to automate annotation of cognitive strategies using LLMs. *Under Review*.
- Contributed to NLP research on framing patterns in online child safety news coverage. *Published in WebSci 2025*.

K. N. Toosi University of Technology, Teaching Assistant — Tehran, Iran, Nov 2021 – July 2022

- Assisted instruction and grading in graduate courses: Probabilistic Graphical Models, Machine Learning, and Statistical Pattern Recognition.

ERON Company, Developer — Tehran, Iran, Sep 2019 – Mar 2020

- Designed and implemented backend systems and databases for web applications using PHP and MySQL.

VADA House of Mobile, Developer — Tehran, Iran, Jan 2019 – Sep 2019

- Built full-stack web applications and APIs using Laravel framework and PHP for internal platforms.

Awards, Fellowships, and Highlights

Selected to attend the 8th Annual Summer Institute in Computational Social Science, University of Pennsylvania — Philadelphia, PA, July 2024

Selected participant at the CRA-WP Grad Cohort for Women 2025 — Denver, CO, April 2025

Certifications

- **Natural Language Processing**, Coursera (Aug 2021), Credential ID: 5WUJGRXXP22V
- **Machine Learning with scikit-learn**, FUN (Jul 2021), Credential ID: 4TD52DHM5TCD
- **Deep Learning Workshop**, IEEE Iran Section (Mar 2021), Credential ID: 147474

Technologies

Languages:	Python, Java, SQL
Libraries/Frameworks:	PyTorch, PyTorch Lightning, Keras, Scikit-Learn, HuggingFace Transformers, Numpy, Pandas
Tools:	Git, LaTeX, Linux, Jupyter Notebook, Kaggle