Ali (Seyedali) Mohammadi

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About

Interests and Aims

My research interests lie at the intersection of Artificial Intelligence (AI), Machine Learning (ML), and Natural Language Processing (NLP), with a focus on explainability, robustness, Neurosymbolic AI, and the integration of Knowledge Graphs. I aim to make language models more transparent, enabling their use in high-stakes applications such as mental health and cybersecurity. My research has revealed inconsistencies between language models' attention mechanisms and ground truth explanations, indicating that even when a model's decision is correct, it may not align with the reasoning processes of human experts. I have publications in prestigious venues, including a top-tier conference (AAAI) and a prominent workshop (BlackboxNLP at EMNLP).

Education

2021–Present **Ph.D. in Computer Science**, *University of Maryland, Baltimore County (UMBC)*, Baltimore, *USA*, GPA: 3.78/4.0

Completed **Master of Science in Computer Engineering-Artificial Intelligence**, *Islamic Azad University*, Mashhad, *IRAN*. GPA: 3.63/4.00

Experience

2023–Present **Graduate Research Assistant**, *Knowledge Infused AI and Inference Lab (KAI^2 Lab), Department of Computer Science at UMBC*, Baltimore

- Leading research projects focused on leveraging LLMs for explainability and robustness.
- Developed a framework named WellDunn on the Robustness and Explainability of Language Models.
- Collaborated with another team to develop a dataset for attribution evaluation REASONS: A benchmark for REtrieval and Automated citationS Of scieNtific Sentences using Public and Proprietary LLMs.
- Collaborated with a multidisciplinary team to develop a chapter book: IoT-Based Preventive Mental Health Using Knowledge Graphs and Standards for Better Well-Being. In the Book chapter Smart Technologies for Achieving Good Health and Well-Being: Towards Sustainable Development Goal, Taylor & Francis.

Publications

Book Chapter

Gyrard, A., **Mohammadi, S.**, Gaur, M., & Kung, A. (2024). IoT-Based Preventive Mental Health Using Knowledge Graphs and Standards for Better Well-Being. (Book chapter, Smart Technologies for Achieving Good Health and Well-Being: Towards Sustainable Development Goal, Taylor & Francis)

Journal

Khairdoost, N., Pour, M. R. B., **Mohammadi, S.** , & Jajarm, M. H. (2015). A Robust GA/KNN Based Hypothesis Verification System For Vehicle Detection. International Journal of Artificial Intelligence & Applications, 6(2), 21.

Conference Proceedings

- **Mohammadi, S.**, Raff, E., Malekar, J., Palit, V., Ferraro, F., and Gaur, M., 2024. WellDunn: On the Robustness and Explainability of Language Models and Large Language Models in Identifying Wellness Dimensions. *In Proceedings of the 7th BlackboxNLP Workshop: Analyzing and Interpreting Neural Networks for NLP*, pages 364–388, Miami, Florida, US. **Association for Computational Linguistics**. Acceptance rate: 38.4%.
- Mohseni, S., **Mohammadi, S.**, Tilwani, D., Ndawula, G. K., Vema, S., Saxena, Y., Raff, E., & Gaur, M. (2025). Can LLMs obfuscate code? A systematic analysis of large language models into assembly code obfuscation. (Accepted AAAI 2025). Acceptance rate: 23.4%.

Under Review
- Tilwani, D., Saxena, Y., **Mohammadi, S.**, Raff, E., Sheth, A., Parthasarathy, S., & Gaur, M. (2024). REASONS: A benchmark for REtrieval and Automated citationS Of scieNtific Sentences using Public and Proprietary LLMs. (Under Review WWW 2025)

Talks and Awards

- Invited Talk at ACM CIKM Workshop on Knowledge Graphs for Responsible AI.
- EMNLP BlackboxNLP Travel Award.
- UMBC Graduate Student Travel Award for EMNLP 2024.

Tutorials

- Neurosymbolic AI for EGI: Explainable, Grounded, and Instructable Generations, AAAI, 2025.
- Tutorial on NeuroSymbolic AI at IEEE Big Data, 2024.

Teaching Experience

2021–2023 **Teaching Assistant**, *Department of Computer Science at University of Maryland, Baltimore County*, Baltimore, Maryland, USA. (Machine Learning and Data Structure Courses.)

Certifications

- Python for Everybody by University of Michigan on *Coursera*. 2020.
- *N*eural Networks and Deep Learning. 2019. (score: 100%).
- *I*mproving Deep Neural Networks: Hyperparameter Tuning, Regularization &. 2020. (100%).
- *C*onvolutional Neural Networks. 2019. (99.50%).
- *S*equence Models Neural Networks. 2020. (99%).
- *S*tructuring Machine Learning Projects. 2020. (96.70%).

Community Service (Academic Reviewing)

Journals
- Computer Applications in Engineering Education(Wiley) Journal (2020).

Conferences
- ACM Transactions on Computing for Healthcare (4 reviews), AAAI Conference on Artificial Intelligence (1 review), The Web Conference (2 reviews).

PC Member
- The Cyber Social Threats (CySoc) workshop at the Web Conference.

Ali (Seyedali) Mohammadi
December 27, 2024