

Ali (Seyedali) Mohammadi

✉ m294@umbc.edu
🌐 mohammadi-ali.github.io
in [ali-mohammadi-b0aab072](https://www.linkedin.com/in/mohammadi-ali)
🔗 [mohammadi-ali](https://scholar.google.com/citations?user=1-N0KaIAAAAJ)
🔗 <https://scholar.google.com/citations?user=1-N0KaIAAAAJ>

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: 3.81/4.0

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 (KAI² 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.
- Neural Networks and Deep Learning. 2019. (score: 100%).
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization &. 2020. (100%).
- Convolutional Neural Networks. 2019. (99.50%).
- Sequence Models Neural Networks. 2020. (99%).
- Structuring 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.

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January 8, 2025