

Zohair Shafi

✉ shafi.z[at] northeastern [dot] edu | 🏠 http://zohairshafi.github.io | 🔗 zohairshafi | in zohairshafi | 📍 Boston, Massachusetts, U.S.

Education

Northeastern University

PhD in Computer Sciences (Specializing in Machine Learning and Network Science) - CGPA 3.98/4

Boston, MA, U.S.

Sep. 2021 - Present

Visvesvaraya Technological University

Bachelor of Engineering in Computer Sciences - CGPA 8.16/10

Bangalore, Karnataka, India

Aug. 2015 - Jun. 2019

Publications

- [1] **Shafi, Z.**, Savcicens, G., and Eliassi-Rad, T., 2025. **REGE: A Method for Incorporating Uncertainty in Graph Embeddings**. In Proceedings of the 2025 **SIAM International Conference on Data Mining (SDM)**. [\[Link\]](#)
- [2] **Shafi, Z.**, Miller, B.A., Eliassi-Rad, T. and Caceres, R. S., 2025. **Accelerated Discovery of Set Cover Solutions via Graph Neural Networks**. In International Conference on the Integration of **Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR)**. [\[Link\]](#)
- [3] **Shafi, Z.**, Chatterjee, A., and Eliassi-Rad, T., 2025. **Explaining Node Embeddings**. In **Transactions on Machine Learning Research (TMLR)**. [\[Link\]](#)
- [4] Miller, B.A., **Shafi, Z.**, Ruml, W., Vorobeychik, Y., Eliassi-Rad, T. and Alfeld, S., 2025. **Defense Against Shortest Path Attacks**. In Proceedings of the 2025 **SIAM International Conference on Data Mining (SDM)**. [\[Link\]](#)
- [5] Miller, B.A., **Shafi, Z.**, Ruml, W., Vorobeychik, Y., Eliassi-Rad, T. and Alfeld, S., 2023. **Attacking Shortest Paths by Cutting Edges**. **ACM Trans. Knowl. Discov. Data (TKDD)** 18, 2, Article 35 (February 2024), 42 pages. [\[Link\]](#)
- [6] **Shafi, Z.**, Miller, B.A., Chatterjee, A., Eliassi-Rad, T. and Caceres, R. S., 2023. **GRASP: Accelerating Shortest Path Attacks via Graph Attention**. In **Deep Learning on Graphs Workshop, Knowledge Discovery and Data Mining (KDD) 2023**. [\[Link\]](#)
- [7] Chatterjee, A., Walters, R., **Shafi, Z.**, Ahmed, O.S., Sebek, M., Gysi, D., Yu, R., Eliassi-Rad, T., Barabási, A.L. and Menichetti, G., 2023. **Improving the generalizability of protein-ligand binding predictions with AI-Bind**. **Nature Communications**, 14(1), p.1989. [\[Link\]](#)
- [8] Miller, B.A., **Shafi, Z.**, Ruml, W., Vorobeychik, Y., Eliassi-Rad, T. and Alfeld, S., 2021, September. **PATHATTACK: Attacking Shortest Paths in Complex Networks**. In **Joint European Conference on Machine Learning and Knowledge Discovery in Databases (ECML-PKDD)** (pp. 532-547). Springer. [\[Link\]](#)
- [9] Liu, D.*, **Shafi, Z.***, Fleisher, W., Eliassi-Rad, T. and Alfeld, S., 2021, July. **RAWLSNET: Altering Bayesian Networks to Encode Rawlsian Fair Equality of Opportunity**. In Proceedings of the 2021 **AAAI/ACM Conference on AI, Ethics, and Society (AIES)** (pp. 745-755). [\[Link\]](#)

Work Experience

Fidelity Investments

Co-op - Data Scientist - AI Center of Excellence

Boston, MA, U.S.

Jan. 2025 - Jul. 2025

- Developed a foundational graph neural network-based architecture to represent general mixed integer programs (MIPs) to enhance the efficiency of heuristic solution methods.
- Developed a foundational architecture for customer representation for use across various business units.

Akamai Technologies

Performance Engineer II - Global Performance And Operations

Bangalore, India

Jul. 2019 - Jul. 2021

- Optimized platform performance metrics, including throughput, content offload, and latency, leading to enhanced overall system efficiency.
- Designed and implemented systems for efficient data mining and visualization from raw log data, providing actionable insights and improved decision-making.
- Scaled and prepared the Akamai platform for critical events, such as the IPL cricket league and Apple WWDC keynote, successfully handling up to 10 Tbps of traffic in a single country.
- Mentored and guided two interns through the development of their projects and presentations, ensuring successful completion.

Akamai Technologies

Intern - Platform & Delivery

Bangalore, India

Jan. 2019 - May 2019

- Developed an efficient system for root cause analysis by performing correlation across multiple streams of time series data, improving the accuracy and speed of issue identification.
- Developed tools to visualize network traffic demand across the Akamai network at various levels of granularity, including by country or specific server sets, improving capacity planning and resource allocation.

Certifications

Reinforcement Learning Specialization

University of Alberta AMII

Coursera

Apr. 2020

- Courses - Fundamentals of Reinforcement Learning | Sample based Learning Methods | Prediction and Control with Function | A Complete Reinforcement Learning System (Capstone)