Zohair Shafi

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Education

Northeastern University — *Boston, MA, U.S.*
PhD in Computer Sciences (Specializing in Machine Learning and Network Science) — Sep. 2021 - Present

Visvesvaraya Technological University — *Bangalore, Karnataka, India*
Bachelor of Engineering in Computer Sciences — Aug. 2015 - Jun. 2019

Publications

[1] **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 2023. [Link]

[2] Miller, B.A., **Shafi, Z.**, Ruml, W., Vorobeychik, Y., Eliassi-Rad, T. and Alfeld, S., 2023. **Defense Against Shortest Path Attacks**. arXiv preprint arXiv:2305.19083. [Link]

[3] 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]

[4] Miller, B.A., **Shafi, Z.**, Ruml, W., Vorobeychik, Y., Eliassi-Rad, T. and Alfeld, S., 2021. **Optimal Edge Weight Perturbations to Attack Shortest Paths**. arXiv preprint arXiv:2107.03347. [Link]

[5] 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 (pp. 532-547). Springer, Cham.[Link]

[6] 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 (pp. 745-755). [Link]

Ongoing Projects

Explaining Node Embeddings

Zohair Shafi, Ayan Chatterjee, Tina Eliassi-Rad — November 2021 - Present

- Develop an approach to explain each dimension in a low dimensional latent space representsation of a network.
- Invited to present at **Graph Exploitation Symposium, May 2022**. Accepted and presented at **NetSci, July 2022**

Work Experience

Akamai Technologies — *Bangalore, India*
Performance Engineer - Global Performance And Operations — Jul. 2019 - Jul. 2021

- Developed solutions to optimize performance metrics like throughput, content offload and latency across the platform
- Developed systems for efficient data mining and visualizations from raw log data
- Helped scale and prepare the Akamai platform and run final checks for company critical events such as the IPL cricket league and the Apple WWDC keynote driving up to 10 Tbps of traffic in a single country.
- Mentored 2 interns during the development of their respective projects and presentations

Akamai Technologies — *Bangalore, India*
Intern - Platform & Delivery — Jan. 2019 - May 2019

- Built a system to help root cause analysis by performing correlation across time series data
- Created tools to help visualize network traffic demand across countries for a set of servers

Certifications

Reinforcement Learning Specialization — *Coursera*
University of Alberta AMII — Apr. 2020

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

Deep Learning Specialization — *Coursera*
deeplearning.ai — Apr. 2018

- Courses - Neural Networks And Deep Learning | Improving Deep Neural Networks : Hyper-parameter Tuning, Regularization and Optimization | Structuring Machine Learning | Convolutional Neural Networks | Sequence Models

Image and Video Processing: From Mars to Hollywood with a Stop at the Hospital — *Coursera*
Duke University — May 2017