

Pouya Pezeshkpour

✉ Email

🌐 Personal Website

🔍 Google Scholar

Education

- 2015 – 2022 📖 **Ph.D., Electrical Engineering/Machine Learning**, University of California, Irvine, Advised by Prof. Sameer Singh.
M.Sc. in Electrical Engineering/Machine Learning.
- 2010 – 2015 📖 **B.Sc., Electrical Engineering**, Sharif University of Technology, Tehran, Iran.
Minor in Pure Mathematics.

Research Interests

- Knowledge Graphs 📖 Completion, Interpretability, Adversarial Attacks, and Classification.
- NLP 📖 Interpretability, Adversarial Attacks, Question Answering, and Text Generation.
- Vision 📖 Interpretability, Active Learning, and Few-Shot Learning.

Internships

- Summer 2021 📖 **Research Intern, Semantic Machines at Microsoft Research.**
Supervisor: Prof. Benjamin Van Durme.
"Active Dialogue Simulation in Conversational Systems Using GPT-3", actively guiding dialogue generation using GPT-3 to populate low-resource domain data for training conversational systems.
- Summer 2020 📖 **Machine Learning Engineer Intern, Siri Knowledge Group at Apple.**
Supervisor: Xiao Ling.
"Adversarial Augmentation for Query Understanding", improving robustness and performance of Siri question answering system through creating adversarial samples.
- Summer 2019 📖 **Research Intern, Semantic Scholar Group at Allen Institute for AI.**
Supervisor: Prof. Doug Downey.
"Question Generation and Targeting for Assisted Flashcard Study of Scientific Papers", providing a personalized memory assistant technology by designing an automatic question generation model and active spaced repetition algorithm.
- Summer 2018 📖 **Research Intern, Fujitsu Laboratories of America.**
Supervisor: Ramya Srinivasan.
"Generating User-Friendly Explanations", generating a user-friendly explanation for models' prediction over loan denial application.
- Summer 2014 📖 **Research Intern, The Chinese University of Hong Kong.**
Supervisor: Prof. Chandra Nair.
"Hypercontractivity Calculations for the Binary Symmetric Case".

Honors and Awards

- 📖 Rescinded offer for the Research Scientist position from Meta.
- 📖 NEC Laboratories [Student Research Fellowship](#) 2021-2022 (80,000 \$).
- 📖 [Best Paper Runners Up](#) at AKBC 2020.
- 📖 AWS Research Award 2019-2020.
- 📖 Henry Samueli Fellowship, University of California, Irvine, 2015-2016.
- 📖 Member of Society for Exceptional Talents at Sharif University of Technology.

Research Publications

Conference Proceedings

- 1 Seshadri, P., **Pezeshkpour, P.**, & Singh, S. (2023). "*Quantifying Social Biases Using Templates is Unreliable*", Submitted to the European Chapter of the Association for Computational Linguistics (EACL).
- 2 **Pezeshkpour, P.**, Jain, S., Singh, S., & Wallace, B. (2022). "*Combining Feature and Instance Attribution to Detect Artifacts*", Findings of the Association for Computational Linguistics (ACL Findings).
- 3 **Pezeshkpour, P.**, Jain, S., Wallace, B., & Singh, S. (2021). "*An Empirical Comparison of Instance Attribution Methods for NLP*", Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL).
- 4 **Pezeshkpour, P.**, Tian, Y., & Singh, S. (2020). "*Revisiting evaluation of knowledge base completion models*", Automated Knowledge Base Construction (AKBC). (nominated for best paper award).
- 5 **Pezeshkpour, P.**, Tian, Y., & Singh, S. (2019a). "*Investigating Robustness and Interpretability of Link Prediction via Adversarial Modifications*", Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL).
- 6 **Pezeshkpour, P.**, Chen, L., & Singh, S. (2018). "*Embedding Multimodal Relational Data for Knowledge Base Completion*", Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP).
- 7 **Pezeshkpour, P.**, & Behroozi, H. (2014). "*Optimal tradeoff between source and state distortions over a Gaussian channel using single and hybrid digital analog codes*". IEEE, 7th International Symposium on Telecommunications (IST).

Journal Articles

- 1 Srivastava, A., Rastogi, A. et al. (2022). "*Beyond the Imitation Game: Quantifying and extrapolating the capabilities of language models*". Submitted to Transactions on Machine Learning Research (TMLR).
- 2 Chan, Y., **Pezeshkpour, P.**, Geng, C., & Jafar, S. A. (2022). "*An Extremal Network Theory for the Gain of Optimal Power Control over Scheduling*". IEEE Transactions on Wireless Communications.
- 3 Khashabi, D., Cohan, A., Shakeri, S., Hosseini, P., **Pezeshkpour, P.** et al. (2021). "*ParsiNLU: A Suite of Language Understanding Challenges for Persian*". Transactions of the Association for Computational Linguistics (TACL).

Workshop and Symposia




- 1 **Pezeshkpour, P.**, Zhao, Z., & Singh, S. (2020a). "*On the Utility of Active Instance Selection for Few-Shot Learning*". NeurIPS Workshop on Human, Model in the Loop Evaluation, and Training Strategies (HAMLETS).
- 2 **Pezeshkpour, P.**, Zhao, Z., & Singh, S. (2020b). "*Using Data Importance for Effective Active Learning*". CVPR workshop on Visual Learning with Limited Labels (VL3).
- 3 **Pezeshkpour, P.**, Tian, Y., & Singh, S. (2019b). "*Integrating Local Structure into Knowledge Graph Embeddings*". SoCal NLP Symposium.
- 4 Srinivasan, R., Chander, A., & **Pezeshkpour, P.** (2018). "*Generating User-friendly Explanations for Loan Denials Using GANs*". NeurIPS Workshop on Challenges and Opportunities for AI in Financial Services.
- 5 **Pezeshkpour, P.**, Guestrin, C., & Singh, S. (2017). "*Compact Factorization of Matrices Using Generalized Round-rank*". Southern California Machine Learning Symposium.

Patents





- 1 **Pezeshkpour, P.**, Malur Srinivasan, R., & Chander, A. (2020a). *User-Friendly Explanation Production Using Generative Adversarial Networks*". US Patent App. 16/278,604.
- 2 **Pezeshkpour, P.**, Malur Srinivasan, R., & Chander, A. (2020b). *"Explanations Generation with Different Cognitive Values Using Generative Adversarial Networks"*. US Patent App. 16/278,609.

Professional Experience


Workshop Organizing

- 2021  Co-organized Explainable Graph-Based Machine Learning workshop at AKBC
- 2020  Co-organized Knowledge Bases and Multiple Modalities workshop at AKBC
- 2019  Co-organized Knowledge Bases and Multiple Modalities workshop at AKBC



Review Service

- 2021  Reviewer at NeurIPS, NAACL.
- 2020  Reviewer at NeurIPS, ICLR, AAAI, EMNLP.
- 2019  Reviewer at NeurIPS, ICLR, EMNLP.
- 2018  Reviewer at EMNLP.

Relevant Courses

-  Machine Learning, Natural Language Processing, Neural Networks, Probabilistic Learning, Information Theory, Random Processes, Linear Algebra, and Convex Optimization.

Skills

- Coding  Python (Primary), Matlab.
- Frameworks  Pytorch (Primary), Keras, Tensorflow, Scikit-Learn, AllenNLP.

References

Available on Request