Pouya Pezeshkpour

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https://pouyapez.github.io

Education

2015 – Present — **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.

Internships

Summer 2021 — **Research Intern, Semantic Machines at Microsoft Research**.
Supervisor: Benjamin Van Durme.

Summer 2020 — **Research 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, Allen Institute for AI**.
Supervisor: Prof. Doug Downey.
"Question Generation and Targeting for Assisted Flashcard Study of Scientific Papers", providing a personalize memory assistant technology for helping researchers in remembering semantic scholar papers 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, Hong Kong**.
Supervisor: Prof. Chandra Nair.
"Hypercontractivity Calculations for the Binary Symmetric Case".

Research Interests

Knowledge Graphs — Completion, Interpretability, Adversarial Attacks, and Classification.
NLP — Interpretability, Adversarial Attacks, Question Answering, and Text Generation.
Vision — Interpretability, and Active Learning.

Honors and Awards

- NEC Laboratories Student Research Fellowship 2021-2022.
- 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

Journal Articles

1. Khashabi, D., Cohan, A., Shakeri, S., Hosseini, P., **Pezeshkpour, P**, Alikhani, M., … Ghazarian, S. et al. (2021). Parsinlu: A suite of language understanding challenges for persian. *Submitted to TACL*.

Conference Proceedings

1. **Pezeshkpour, P**, Jain, S., Wallace, B., & Singh, S. (2021). An empirical comparison of instance attribution methods for nlp. In *Proceedings of the 2021 conference of the north american chapter of the association for computational linguistics (naacl)*.
2. **Pezeshkpour, P**, Tian, Y., & Singh, S. (2020). Revisiting evaluation of knowledge base completion models. In *Automated knowledge base construction (akbc)* (nominated for best paper award).
3. **Pezeshkpour, P**, Tian, Y., & Singh, S. (2019b). Investigating robustness and interpretability of link prediction via adversarial modifications. In *Proceedings of the 2019 conference of the north american chapter of the association for computational linguistics (naacl)*.
4. **Pezeshkpour, P**, Chen, L., & Singh, S. (2018). Embedding multimodal relational data for knowledge base completion. In *Proceedings of the 2018 conference on empirical methods in natural language processing (emnlp)*.
5. **Pezeshkpour, P**, & Behroozi, H. (2014). Optimal tradeoff between source and state distortions over a gaussian channel using single and hybrid digital analog codes. In *7'th international symposium on telecommunications (ist'2014)*. IEEE.

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. (2019a). *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). Explanations generation with different cognitive values using generative adversarial networks. US Patent App. 16/278,609.
2. **Pezeshkpour, P**, Malur Srinivasan, R., & Chander, A. (2020b). User-friendly explanation production using generative adversarial networks. US Patent App. 16/278,604.

Professional Experience

Workshop Organizing

- 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 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.