Nazneen Fatema Rajani

CONTACT INFORMATION

Salesforce Research
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Palo Alto, CA 94043.

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RESEARCH INTERESTS

Explainable AI (XAI), NLP, Robustness, Commonsense Reasoning.

EDUCATION

University of Texas at Austin, Austin, TX, USA
Ph.D., Computer Science, August 2014 - 2018

- **Advisor:** Ray Mooney
- **Thesis**: Explainable Improved Ensembling for Natural Language and Vision

University of Texas at Austin, Austin, TX, USA
M.S., Computer Science, August 2012 - May 2014

- **Advisor:** Jason Baldridge
- **Thesis**: New topic detection using topical alignment

Birla Institute of Technology and Science, Pilani, Pilani, India
MSc. (Tech.), Information Systems, August 2007 - December, 2011

- **Thesis:** Sentiment Analysis for Tweets
- **Advisor:** Onkar Dabeer (TIFR, Mumbai)

PROFESSIONAL EXPERIENCE

Salesforce Research, USA — **January 2019 – Present**
Senior Research Scientist
Interpretability of NLP models, commonsense reasoning, robust ML

IBM Watson Research, USA — **May 2016 – August 2016**
Watson Research Staff Intern
Ensembling for entity linking in the medical domain

eBay Research Labs, USA — **May 2014 – August 2014**
Research Scientist Intern
Identifying “Interestingness" using Pinterest text data

Qualcomm Research, USA — **May 2013 – August 2013**
Research Intern
Motion detection and classification using HMM

iStream, Bangalore, India — **January 2012 – July 2012**
Analytics Lead
Personalization for on-demand videos

TIFR, Mumbai, India
Research Intern
Sentiment Analysis for Tweets

July 2011 – December 2011

Yahoo! Labs, Bangalore, India
Research Intern
Personalization of IE browser

January 2011 – May 2011

PUBLICATIONS

Jesse Vig, Ali Madani, Lav Varshney and **Nazneen Fatema Rajani.** (Re)Discovering Protein Structure and Function through Language Modeling. In ICML workshop on ML Interpretability for Scientific Discovery. 2020.

Tianlu Wang, Xi Victoria Lin, **Nazneen Fatema Rajani**, Bryan McCann, Vicente Ordonez, Caiming Xiong. Double-Hard Debias: Tailoring Word Embeddings for Gender Bias Mitigation. In Proceedings of ACL 2020.

Nazneen Fatema Rajani*, Rui Zhang*, Yi Chern Tan, Stephan Zheng, Jeremy Weiss, Aadit Vyas, Abhijit Gupta, Caiming Xiong, Richard Socher, Dragomir Radev. ESPRIT: Explaining Solutions to Physical Reasoning Tasks.
In proceedings of ACL 2020. * Indicates equal contribution.

Jay DeYoung*, Sarthak Jain*, **Nazneen Fatema Rajani***, Eric Lehman, Caiming Xiong, Richard Socher, Byron Wallace. ERASER: A Benchmark to Evaluate Rationalized NLP Models. In proceedings of ACL 2020. * Indicates equal contribution.

Nazneen Fatema Rajani, Bryan McCann, Caiming Xiong and Richard Socher. Explain Yourself! Leveraging Language Models for Commonsense Reasoning. In proceedings of ACL 2019.

Explainable Improved Ensembling for Natural Language and Vision **(Ph.D. Thesis)**

Nazneen Fatema Rajani and Raymond J. Mooney. Ensembling Visual Explanations. *Book chapter* for Explainable and Interpretable Models in CV and ML. Published by Springer. November 2018. https://link.springer.com/chapter/10.1007/978-3-319-98131-4_7

Nazneen Fatema Rajani and Raymond J. Mooney. Stacking with Auxiliary Features for Visual Question Answering. In Proceedings of NAACL 2018.

Nazneen Fatema Rajani and Raymond J. Mooney. Ensembling Visual Explanations for VQA. In Proceedings of the NIPS 2017 workshop on Visually-Grounded Interaction and Language (ViGIL).

Nazneen Fatema Rajani and Raymond J. Mooney. Using Explanations to Improve Ensembling of Visual Question Answering Systems. In Proceedings of the IJCAI 2017 Workshop on Explainable Artificial Intelligence (XAI).

Nazneen Fatema Rajani, Mihaela Bornea and Ken Barker. Stacking With Auxiliary Features for Entity Linking in the Medical Domain. In Proceedings of the ACL 2017

workshop on BioNLP.

Nazneen Fatema Rajani and Raymond Mooney. Stacking with Auxiliary Features. In proceedings of IJCAI 2017.

Nazneen Fatema Rajani and Raymond Mooney. Stacking with Auxiliary Features: Improved Ensembling for Natural Language and Vision. **PhD Proposal**. November 2016.

Nazneen Fatema Rajani and Raymond Mooney. Combining Supervised and Unsupervised Ensembles for Knowledge Base Population. In proceedings of EMNLP 2016.

Nazneen Fatema Rajani, Vidhoon Vishwanathan, Yinon Bentor and Raymond Mooney. Stacking Ensembles of Information Extractors for Knowledge Base Population. In proceedings of ACL 2015.

Nazneen Fatema Rajani, Kate McArdle and Inderjit Dhillon. Parallel *k* Nearest Neighbor Graph Construction Using Tree-Based Data Structures. In proceedings of KDD workshop 2015.

Nazneen Fatema Rajani, Khashayar Rohanimanesh, Eduardo Oliveira and Aamer Hydrie. Identifying Interestingness in Fashion E-commerce using Pinterest Data. In proceedings of KDD workshop 2015.

Nazneen Fatema Rajani, Kate McArdle, Jason Baldridge. Extracting Topics Based on Authors, Recipients and Content in Microblogs**.** In proceedings of ACM SIGIR 2014.

Nazneen Fatema Rajani, Rajoshi Biswas, Gaurav Dar and Ramesha C. K. Solution to the Tic-Tac-Toe problem using Hamming Distance Approach in a Neural Network. In proceedings of ISMS 2011.

HONORS AND AWARDS

AWIC Scholarship to attend Grace Hopper conference in 2016
ACM SIGIR Student Travel Grant 2014
Microsoft Women's Hackathon winner, 2014
UTCS Scholarship to attend Grace Hopper conference in 2014
eBay Scholarship 2013
Google Scholarship to attend Grace Hopper conference in 2013
Google India Women in Engineering Award 2011

TALKS

Explainable Physical Reasoning. Invited talk at Yale CS Dept. March 2020.
Commonsense Reasoning using Explanations. Invited talk at Toronto Machine Learning Seminar (TMLS). November 2019.
Explainable AI and Trust. Part of Research keynote at Salesforce Dreamforce 2019.
Leveraging Explanations for Performance and Generalization in NLP and RL. Forum for AI (FAI) talk at UT Austin. October 2019.
How XAI influences ethical policies? Invited talk for UNESCO session at Indaba 2019. Nairobi, Kenya.

Supervised and unsupervised ensemble for cold start slot filling. Selected talk at NIST TAC Meeting, Gaithersburg, MD. November 2015.
Ensembling slot filler systems. Selected talk at DEFT PI Meeting, Boulder, CO. May 2015.

TEACHING EXPERIENCE

University of Texas at Austin, Austin, TX, USA
Teaching Assistant **Spring 2013**
Introduction to Programming

University of Texas at Austin, Austin, TX, USA
Teaching Assistant **Fall 2012**
Principles of Computer Systems

SERVICE

Area chair for EMNLP 2020
Reviewer for ACL 2020, EMNLP 2019, ACL 2019, NAACL 2019, EMNLP 2017, CONLL 2017, NIPS 2016, EMNLP 2016, NAACL 2016, AAAI 2015
Reviewer for INFORMS Journal on Computing

LANGUAGES

Java, Python, Scala, MATLAB

TOOLKITS

Pytorch, Streamlit.io, TensorFlow, Theano, Caffe

MEDIA

Quanta magazine, VentureBeat, SiliconAngle, TechCrunch, Datanami, ZDNet