Forough Poursabzi-Sangdeh

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RESEARCH INTERESTS

I am interested in the interaction between humans and Machine Learning (ML) systems. From data used to train models to decisions made with the help of ML systems, humans are at the heart of ML. Therefore, it is important to study humans and ML systems jointly. I use my ML knowledge in training, debugging, and evaluating models and employ principles from Human–Computer Interaction (HCI) and behavioral psychology in designing human-subject experiments to study how humans behave when they interact with ML systems. Recently, I have focused on studying this interaction in the context of interpretability and fairness. My long-term ambition is to leverage insights from these studies and create systems that foster an effective and responsible collaboration between humans and models.

EDUCATION

University of Colorado, Boulder, CO
PhD in Computer Science, 2013–2018
Advisor: Jordan Boyd-Graber
Dissertation: Design and Empirical Evaluation of Interactive and Interpretable Machine Learning
Master of Science, Computer Science, 2013–2015

University of Tehran, Tehran, Iran
BE in Computer Engineering, 2008–2012

EMPLOYMENT

Microsoft Research, New York, NY
Postdoctoral Researcher, July 2018–Present

Microsoft Research, New York, NY
Research Intern, June 2017–August 2017
Supervisor: Jennifer Wortman Vaughan
Research on studying model interpretability from human perspective using human-subject experiments

Oracle Labs, Burlington, MA
Research Intern, June 2016–August 2016
Supervisor: Pallika Kanani
Research on text classification with minimally labeled documents using active learning and topic models

University of Colorado, Boulder, CO
Graduate Research Assistant, August 2014–July 2018
Supervisor: Jordan Boyd-Graber
Research on designing, implementing, and evaluating systems to help humans label and understand large document collections

PUBLICATIONS

Forough Poursabzi-Sangdeh, Daniel G. Goldstein, Jake M. Hofman, Jennifer Wortman Vaughan, and Hanna Wallach. "Manipulating and Measuring Model Interpretability". *Revise and resubmit at Management Science*. (A shorter version appeared at the NIPS workshop on Transparent and Interpretable Machine Learning in Safety Critical Environments, 2017.)

Bran Knowles, Alison Smith-Renner, **Forough Poursabzi-Sangdeh**, Di Lu, Halimat Alabi. "Attending to the Problem of Uncertainty in Current and Future Health Wearables". *Communications of the ACM (CACM)*, 2018.

Alison Smith, Tak Yeon Lee, **Forough Poursabzi-Sangdeh**, Leah Findlater, Jordan Boyd-Graber, and Niklas Elmqvist. "Evaluating Visual Representations for Topic Understanding and Their Effects on Manually Generated Labels". *Transactions of the Association for Computational Linguistics (TACL)*, 2017.

Forough Poursabzi-Sangdeh, Jordan Boyd-Graber, Leah Findlater, Kevin Seppi. "ALTO: Active Learning with Topic Overviews for Speeding Label Induction and Document Labeling". *Association for Computational Linguistics (ACL)*, 2016. [Code, now being used by Snagajob]

Alison Smith, Tak Yeon Lee, **Forough Poursabzi-Sangdeh**, Jordan Boyd-Graber, Niklas Elmqvist, Kevin Seppi, Leah Findlater. "Human-Centered and Interactive: Expanding the Impact of Topic Models". *HCML Workshop at CHI*, 2016.

Jason Chuang, John D. Wilkerson, Rebecca Weiss, Dustin Tingley, Brandon M. Stewart, Margaret E. Roberts, **Forough Poursabzi-Sangdeh**, Justin Grimmer, Leah Findlater, Jordan Boyd-Graber, and Jeffrey Heer. "Computer-Assisted Content Analysis: Topic Models for Exploring Multiple Subjective Interpretations". *NIPS Workshop on Human-Propelled Machine Learning*, 2014.

Forough Poursabzi-Sangdeh, and Ananth Kalyanaraman. "On Clustering Heterogeneous Networks". *SIAM Workshop on Network Science*, 2013.

INVITED TALKS

Manipulating and Measuring Model Interpretability
Women in Machine Learning and Data Science (WiMLDS) Meetup, New York, May 2019
O'Reilly Artificial Intelligence Conference, New York, NY, April 2019
Machine Learning Conference (MLConf), San Francisco, CA, November 2018

Design and Empirical Evaluation of Interactive and Interpretable Machine Learning
NYU Tandon School of Engineering, New York, NY, April 2019
Department of Information Science, Boulder, CO, March 2018
Microsoft Research, New York, NY, March 2018
Oracle Labs, Burlington, MA, March 2018

PROFESSIONAL SERVICE

Reviewer and Committees
Microsoft TechFest 2020, ACL 2020, AAAI 2020, IJCAI 2019, CSCW 2019, NeurIPS 2019 (selected as a top reviewer), NeurIPS 2019 Reproducibility Challenge, ICML 2019, ACM Transactions on Computing Education 2018, AISTATS 2018, EMNLP 2018, COLING 2018, EACL 2017, Debugging Machine Learning Models workshop at ICLR 2019, Explainable Smart Systems workshop at Intelligent User Interfaces (IUI) 2018 and 2019, AI for Social Good workshop at NeurIPS 2019, Advances in Interpretable Machine Learning and Artificial Intelligence workshop at KDD 2019, Black in AI workshop at NeurIPS 2017 and 2018

Workshop Organizer
Senior Program and Mentorship Chair for the Women in Machine Learning (WiML) workshop co-located with NeurIPS 2019. (Expected number of attendees: 1000.)

MENTORING

Microsoft Research Data Science Summer School Program, 2019
Research mentor for a group of eight NYC undergrad students for a research project on replication

Harpreet Gaur, undergraduate student at CUNY City Tech, 2019

You Lu, masters student at University of Colorado, 2016 (current position: PhD student at Virgina Tech)

MISCELLANEOUS

Speaker
"It's time for data scientists to collaborate with researchers in other disciplines", The O'Reilly Data Show Podcast, 2019