Bashir Rastegarpanah

Summary

I am a machine learning scientist with hands-on experience in developing novel data-driven solutions to problems from domains such as recommender systems and systems biology. I am passionate about building efficient learning systems that are robust and trustworthy.

Education

- **Ph.D.** Computer Science, Machine Learning ..... Sept 2014 - Aug 2021
  Boston University, Boston, MA
  Advisors: Mark Crovella and Krishna Gummadi (Max Planck Institute)
  Thesis: *Tools for Responsible Decision Making in Machine Learning*
- **M.Sc.** Computer Science, Intelligent Systems ..... 2010 - 2013
  University of Bonn, Germany
- **B.Sc.** Computer Engineering, Software ..... 2006 - 2010
  University of Isfahan, Isfahan, Iran

Experiences

- **Fiddler AI**, Palo Alto, CA ..... Nov 2021 - present
  Data Scientist II
- **MiDAS Group at Boston University**, Boston, MA ..... Sept 2014 - Aug 2021
  Graduate Research Assistant
  Developed new tools for enhancing fairness, privacy, and explainability of learning systems.
  Developed data mining and graph mining techniques for analyzing single-cell genomics data.
- **Max Planck Institute SWS**, Saarbrücken, Germany ..... Feb 2019 - May 2019
  Internship
  Worked on operationalizing data protection regulations for learning systems.
  Developed a bandit framework for auditing data minimization in prediction models.
- **Fraunhofer IAIS**, Sankt Augustin, Germany ..... Sept 2012 - May 2014
  Machine Learning Engineer
  Implemented supervised and unsupervised learning algorithms for creating insight about and predicting user preferences in online recipe platforms.
- **Signal Processing Group at University of Bonn**, Germany ... Sept 2011 - Jan 2012
  Implemented matrix-factorization methods for detecting auditory objects.

Interests & Expertise

- Recommender Systems ◇ Machine Learning for Biology, Finance, and Healthcare
- Privacy, Fairness, and Explainability in AI

Technical Skills

- **Programming:** *proficient in* Python, *Experience with* MATLAB, Java, C++, SQL
- **Machine Learning & Data Science:** Pandas, NumPy, Scikit-learn, Seaborn

Publications

Responsible Machine Learning

◇ "Auditing Black-box Prediction Models for Data Minimization Compliance"
Bashir Rastegarpanah, Krishna P. Gummadi, Mark Crovella.
NeurIPS 2021. Selected as a Spotlight Presentation (3% acceptance rate).

◇ "Fair Inputs and Fair Outputs: The Incompatibility of Fairness in Privacy and Accuracy"
Bashir Rastegarpanah, Mark Crovella, Krishna P. Gummadi.
FairUMAP 2020

◇ "Fighting Fire with Fire: Using Antidote Data to Improve Polarization and Fairness of Recommender Systems"
Bashir Rastegarpanah, Krishna P. Gummadi, Mark Crovella.
*WSDM 2019 (acceptance rate:**16%**)*

◇ "Exploring Explanations for Matrix Factorization Recommender Systems"
Bashir Rastegarpanah, Mark Crovella, Krishna P. Gummadi.
FATREC 2017

Network Science

◇ "Decomposing Networks with Node Attributes into Connected Subnetworks"
Bashir Rastegarpanah, Mark Crovella, Evimaria Terzi.
(Under Submission)

◇ "Single-cell transcriptional networks in differentiating preadipocytes suggest drivers associated with tissue heterogeneity"
Ramirez, Alfred K., Simon N. Dankel, Bashir Rastegarpanah, Weikang Cai, Ruidan Xue, Mark Crovella, Yu-Hua Tseng, C. Ronald Kahn, and Simon Kasif.
***Nature Communications** 11.1 (2020)*
Press Coverage: *AAAS*, *Medical Xpress*

◇ "The Weibull as a Model of Shortest Path Distributions in Random Networks"
Christian Bauckhage, Kristian Kersting, Bashir Rastegarpanah.
MLG 2013

Social Computing and User Modeling

◇ "Collective Attention to Social Media Evolves According to Diffusion Models"
Christian Bauckhage, Kristian Kersting, Bashir Rastegarpanah.
WWW 2014 (poster presentation)

Reviewer

◇ WebConf 2020 ◇ TKDE2016

Awards

◇ NSF Travel Award, Doctoral Consortium at WSDM 2019, Melbourne, Australia.

◇ Boston University Graduate School of Arts and Sciences fellowship, 2014.

◇ 3rd rank in RoboCup2008 Augmented Reality League, Suzhou, China, 2008.