Shalmali Joshi

Curriculum Vitae

Postdoctoral Fellow
Vector Institute

Past Affiliations:
IDEA Lab, WNCG at UT Austin

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Education

'13- '18	Ph.D., Electrical & Computer Engg	UT Austin (Advisor: Joydeep Ghosh)
'09-'11	M.S., Electrical & Computer Engg	UC, San Diego
'05-'09	B. Tech., Electrical Engg	Vishveshvaraya Natl. Inst. of Tech., India

Research Interests

Reliable, Fair, and Explainable Clinical Machine Learning Models

Scientific products

Manuscripts - Submitted

1. Sana Tonekaboni*, **Shalmali Joshi***, David Duvenaud, and Anna Goldenberg. Explaining time series by counterfactuals. 2019

2. Seungeun Yi, Shirly Wang, **Shalmali Joshi**, and Marzyeh Ghassemi. Fair and robust treatment effect estimates: Estimation under treatment and outcome disparity with deep neural models. 2019

3. **Shalmali Joshi**, Oluwasanmi Koyejo, Been Kim, Warut Vijitbenjaronk, and Joydeep Ghosh. Realistic individual recourse and actionable explanations in black-box decision making systems. 2019

Publications - Conference and Journal

4. **Shalmali Joshi***, Sana Tonekaboni*, Melissa McCradden, and Anna Goldenberg. What clinicians want: Contextualizing explainable machine learning for clinical end use. In *Machine Learning for Healthcare*, 2019

5. **Shalmali Joshi**, Rajiv Khanna, and Joydeep Ghosh. Co-regularized monotone regtargeting for semi-supervised LeTOR. In *Siam International Conference on Data Mining (SDM)*, 2018

6. **Shalmali Joshi**, Suriya Gunasekar, David Sontag, and Joydeep Ghosh. Identifiable phenotyping using constrained Non-Negative matrix factorization. In *Machine Learning for Healthcare Conference*, pages 17–41. jmlr.org, 10 December 2016

7. **Shalmali Joshi**, Joydeep Ghosh, Mark Reid, and Oluwasanmi Koyejo. Rényi divergence minimization based co-regularized multiview clustering. *Mach. Learn.*, 104(2-3):411–439, 1 September 2016

8. **Shalmali Joshi**, Oluwasanmi Koyejo, Kristine Resurreccion, and Joydeep Ghosh. Simultaneous prognosis and exploratory analysis of multiple chronic conditions using clinical notes. In *2015 International Conference on Healthcare Informatics*, pages 243–252. ieeexplore.ieee.org, October 2015

Peer Reviewed Workshop/Abstracts

9. Sana Tonekaboni, **Shalmali Joshi**, and Anna Goldenberg. Individualized feature importance for time series risk prediction models. In *Machine Learning for Health Workshop at NeurIPS*, 2019

10. Melissa McCradden, James Anderson, and **Shalmali Joshi**. When your only tool is a hammer: The limits of computational solutions to bias in healthcare ml. In *Fair ML for Health Workshop at NeurIPS*, 2019

11. Seungeun Yi, Shirly Wang, **Shalmali Joshi**, and Marzyeh Ghassemi. Fair and robust treatment effect estimates: Estimation under treatment and outcome disparity with deep neural models. In *Fair ML for Health Workshop at NeurIPS*, 2019

12. Melissa McCradden, Sana Tonekaboni, **Shalmali Joshi**, and Anna Goldenberg. Five pillars of explainable clinical machine learning. In *Frontier of AI-Assisted Care (FAC) Scientific Symposium*, 2019

13. **Shalmali Joshi**, Oluwasanmi Koyejo, Been Kim, Warut Vijitbenjaronk, and Joydeep Ghosh. Towards realistic individual recourse and actionable explanations in black-box decision making systems. In *SafeML Workshop at the International Conference on Learning Representations*, 2019

14. **Shalmali Joshi**, Been Kim, Oluwasanmi Koyejo, and Joydeep Ghosh. Through the looking GANs. In *Women in Machine Learning Workshop @ NIPS*, 2017

15. **Shalmali Joshi**, Oluwasanmi Koyejo, and Joydeep Ghosh. Simultaneous prognosis of multiple chronic conditions from heterogeneous EHR data. In *2015 International Conference on Healthcare Informatics*, pages 497–497. ieeexplore.ieee.org, October 2015

16. **Shalmali Joshi**, Oluwasanmi Koyejo, and Joydeep Ghosh. Multiview clustering via constrained bayesian inference. In *Workshop on Divergence Methods for Probabilistic Inference @ International Conference on Machine Learning (ICML)*, 2014

Theses

17. **Shalmali Joshi**. *Constraint based Approaches to Interpretable and Semi-Supervised Machine Learning*. PhD thesis, The University of Texas at Austin, December 2018

*Equal Contribution.

Teaching experience (Teaching Assistant)

Fall '15	Advanced Predictive Modeling	McCombs School of Business, UT Austin
Fall '14	Graduate Data Mining	Electrical & Computer Engg., UT Austin
Spring '14	Graduate Data Mining	Electrical & Computer Engg., UT Austin

Work Experience

Nov '18-	Postdoctoral Fellow	**Vector Institute**, Toronto, ON, CA
Summer '15	Technical Intern	**Yahoo! Labs**, Sunnyvale, CA, US
June '13-June '15	Software Engineer	**Amazon Lab 126**, Sunnycale, CA, US
Summer '10	HPC Algorithms Intern	**Life Technologies**, Carlsbad, CA, US

Service

Acting Chair	First Conference on Health, Inference, and Learning (CHIL)	2020
Co-chair	NeurIPS Workshop, Fairness in Machine Learning for Health	2019
Reviewer	AAAI, ICLR, AISTATS, NeurIPS, ICML	2019
PC Member	ICLR Workshop, DebugML	2019
PC Member	NeurIPS Workshop, Machine Learning for Health	2018
Reviewer	MLHC, WiML@NeurIPS (Women In Machine Learning), ML4H Workshop at NeurIPS	2017
Reviewer	NeurIPS, ICML, TKDD	2015

Awards

2017	WiML@NIPS Travel Award
2015	IEEE ICHI Travel Award
2003	National Talent Search Scholarship, Govt. of India

Technical Skills

Programming/Scripting	Python, C++, C, R, MATLAB, Perl, Bash, XML
Libraries, Tools, IDEs	PyTorch, Tensorflow, scikit_learn, numpy, scipy, openCV, vim, STL, Cvx, LibSVM, LaTeX, Qt Creator, RStudio, CUDA API, gcc, gdb
Versioning Tools	Git, svn
Operating Systems	OSx, Linux

References

Available Upon Request