CURRICULUM VITAE

Sabina Tomkins
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Education & Training

UC Santa Cruz	Technology Management	Ph.D., 2018
New York University	Computer Science	B.A. *magna cum laude*, 2013

Research Keywords

Probabilistic Modeling, Digital health, Education, Reinforcement learning, Computational sustainability, Causal Inference, Societal equity

Research & Professional Experience

Postdoc, PI Sharad Goel, Stanford University	2019 – present
Postdoc, PI Susan Murphy, Harvard University	2018 – 2019
Machine Learning Research Intern, Amazon	2017 – 2018
Machine Learning Research Intern, IBM Watson	2016 – 2016
Data Science Fellow, Data Science for Social Good, University of Chicago	2014 – 2014

Current Research Focus

I am currently working on two research directions concerned with societal equity, 1) equity in political participation and 2) equity in access to education. In the first direction I exploit geographical boundaries and large-scale data analysis to estimate the negative effect of polling place changes on voting in person. Here, I address the question of whether polling-place changes have disparate impacts. In the second direction I have partnered with a large non-profit platform which allows students to apply to colleges online. I am investigating how students from underrepresented groups navigate the college application process and discovering the scenarios under which they appear to undermatch (apply to and enroll in colleges they are over-qualified for). Finally, I am designing interventions to mitigate undermatching.

Recent Publications

1. Marianne Menictas, **Sabina Tomkins**, and Susan Murphy, Fast physical activity suggestions: Efficient hyperparameter learning in mobile health, Machine Learning for Mobile Health @ NeurIPS (2020).
2. **Sabina Tomkins**, Peng Liao, Serena Yeung, Predrag Klasnja, and Susan Murphy, Fast physical activity suggestions: Efficient hyperparameter learning in mobile health, Reinforcement Learning and Decision Making (2019).

Journal Publications

1. **Sabina Tomkins**, Peng Liao, Predrag Klasnja, and Susan Murphy, IntelligentPooling: Practical thompson sampling for mhealth, Machine Learning, Resubmitting with minor revisions (2021).

2. **Sabina Tomkins** and Lise Getoor, Understanding hybrid-MOOC effectiveness with a collective socio-behavioral model., Journal of Educational Data Mining **11**, 42–77 (2019).

Peer-reviewed Conference Publications

1. **Sabina Tomkins**, Golnoosh Farnadi, Brian Amanatullah, Lise Getoor, and Steven Minton, The impact of environmental stressors on human trafficking, *International Conference on Data Mining (ICDM)*, (2018),
   Acceptance Rate: 9%, Awarded best paper at ICWSM workshop.
2. **Sabina Tomkins**, Steven Isley, Ben London, and Lise Getoor, Sustainability at scale: towards bridging the intention-behavior gap with sustainable recommendations, *Conference on Recommender Systems (RecSys)*, (2018),
   Acceptance Rate: 25%.
3. **Sabina Tomkins**, Lise Getoor, Yunfei Chen, and Yi Zhang, A socio-linguistic model for cyberbullying detection, *Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, (2018),
   Acceptance Rate: 27%.
4. **Sabina Tomkins**, Jay Pujara, and Lise Getoor, Disambiguating energy disaggregation: A collective probabilistic approach, *International Joint Conference on Artificial Intelligence, IJCAI-17*, (2017),
   Acceptance Rate: 26%.
5. **Sabina Tomkins**, Arti Ramesh, and Lise Getoor, Predicting post-test performance from online student behavior: A high school MOOC case study., Educational Data Mining (EDM) (2016),
   Acceptance Rate: 27%.

Other Publications

1. **Sabina Tomkins**, Predrag Klasnja, and Susan Murphy, Personalizing intervention probabilities by pooling, Machine Learning for Health @ NeurIPS (2018).
2. **Sabina Tomkins**, Golnoosh Farnadi, Brian Amanatullah, Lise Getoor, and Steven Minton, The impact of environmental stressors on human trafficking, Beyond Online Data @ ICWSM (Best Paper Award) (2018).
3. **Sabina Tomkins**, Lise Getoor, Yunfei Chen, and Yi Zhang, Detecting cyber-bullying from sparse data and inconsistent labels, Learning with Limited Labeled Data @ NeurIPS (2017).
4. **Sabina Tomkins**, Anbang Xu, Zhe Lui, and Yufan Guo, An unsupervised method for dialog act detection, Women in Natural Language Processing @ ACL (2017).
5. **Sabina Tomkins** and Lise Getoor, A probabilistic disaggregation framework, Urban Computing @ KDD (2016).
6. **Sabina Tomkins** and Lise Getoor, Poster abstract: Contextual air conditioning disaggregation with probabilistic soft logic, ACM International Conference on Embedded Systems for Energy-Efficient Built Environments (BuildSys) (2015).

Professional Activities, Service and Outerach

1. Regular referee for ICML, AAAI and NeurIPS.
2. Red judge for IBM Watson AI XPrize for Social Good
3. Advocacy for women & URMs in science:
   - Research mentor for undergraduates, 2019 - present
   - Volunteer, Data Science Outreach 2019 - present
   - Volunteer, Women in Machine Learning 2016 - present
   - Volunteer, Grace Hopper Celebration 2015
4. Events:
   - Co-Lead, Women in Machine Learning Dinner @ ICML 2019
   - Lead, Data Science Santa Cruz, 2016 - 2018

Teaching Experience

Teaching Assistant, Sequential Decision Making, Harvard University	2019
Guest Lecturer, Computer Science Principles, UC Santa Cruz	2017
Teaching Assistant, Starting a New Technology Company, UC Santa Cruz	2015 – 2016
Instructor and Course Developer, AP Computer Science, Edhesive	2017 – 2018
Tutor, Physics, Chemistry, Computer Science and Math, North Seattle College	2009 – 2011

Fellowships and Grants

July 2017	IJCAI Student Travel Grant
September 2016	BuildSys Student Travel Grant
January 2016	UC Santa Cruz Fellowship
September 2015	UC Santa Cruz Fellowship
July 2015	UC Santa Cruz Fellowship
September 2013	NSF Mathematics Research Grant
February 2013	NSF Mathematics Research Grant
September 2012	NSF Mathematics Research Grant