

# BEN LONDON

Machine Learning Researcher  
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## RESEARCH

Broadly speaking, I work on machine learning theory and algorithms, using theoretical analysis to inform the design of new ML algorithms. My research so far has covered: statistical learning theory; structured prediction; graphical models; deep learning; information retrieval; recommender systems; contextual bandits; and offline policy evaluation and learning. Looking forward, I am especially interested in ethical considerations for industrial ML, including privacy-constrained personalization, fairness to stakeholders, and sociological repercussions.

## EMPLOYMENT

Amazon Music ML, *Sr. Machine Learning Scientist*, 2018 – present.  
Amazon Core ML, Seattle, *Machine Learning Scientist*, 2015 – 2018.  
University of Maryland, LINQS Group, *Graduate Research Assistant*, 2011 – 2015.  
Google Research, New York, *Research Intern*, Summer 2014.  
Sentrana, Inc., *Software Engineer*, 2008 – 2010.

## EDUCATION

Ph.D. Computer Science, University of Maryland College Park, 2010 – 2015. Advisor: Lise Getoor.  
Dissertation: On the Stability of Structured Prediction.  
Committee: Hal Daumé III, Larry S. Davis, Philip Resnik, Dan Roth.  
M.S. Computer Science, Columbia University, 2006 – 2008. Advisor: Tony Jebara.  
B.M. Music Technology, New York University, 1997 – 2001, *magna cum laude*.

## PUBLICATIONS

### *Refereed Conference Papers*

**B. London**, L. Lu, T. Sandler, T. Joachims. Boosted Off-Policy Learning. (*Under review*), 2022.  
**B. London**, T. Sandler. Bayesian Counterfactual Risk Minimization. *ICML*, 2019.  
S. Tomkins, S. Isley, **B. London**, L. Getoor. Sustainability at scale: towards bridging the intention-behavior gap with sustainable recommendations. *RecSys*, 2018.  
**B. London**. A PAC-Bayesian Analysis of Randomized Learning with Application to Stochastic Gradient Descent. *NeurIPS*, 2017.  
J. Pujara, **B. London**, L. Getoor. Budgeted Online Collective Classification. *UAI*, 2015.  
**B. London**, B. Huang, L. Getoor. The Benefits of Learning with Strongly Convex Approximate Inference. *ICML*, 2015. (**Selected for oral presentation**)  
**B. London**, B. Huang, B. Taskar, L. Getoor. PAC-Bayesian Collective Stability. *AISTATS*, 2014.

S. Bach, B. Huang, **B. London**, L. Getoor. Hinge-loss Markov Random Fields: Convex Inference for Structured Prediction. *UAI*, 2013.

**B. London**, B. Huang, B. Taskar, L. Getoor. Collective Stability in Structured Prediction: Generalization from One Example. *ICML*, 2013. **(Selected for oral presentation)**

### Refereed Journal Articles

T. Joachims, **B. London**, Y. Su, A. Swaminathan, L. Wang. Recommendations as Treatments. *AI Magazine*, 2021.

O. Meshi, **B. London**, A. Weller, D. Sontag. Train and Test Tightness of LP Relaxations in Structured Prediction. *JMLR*, 2019.

**B. London**, B. Huang, L. Getoor. Stability and Generalization in Structured Prediction. *JMLR*, 2016.

G. Namata, **B. London**, L. Getoor. Collective Graph Identification. *ACM Transactions on Knowledge Discovery from Data*, 2015.

### Refereed Workshop Papers

A. Buchholz, **B. London**, G. Benedetto, T. Joachims. Off-Policy Evaluation for Learning-to-Rank via Interpolating the Item-Position Model and the Position-Based Model. *CONSEQUENCES+REVEAL Workshop – RecSys*, 2022. **(Selected for oral presentation)**

**B. London**, T. Joachims. Control Variate Diagnostics for Detecting Problems in Logged Bandit Feedback. *CONSEQUENCES+REVEAL Workshop – RecSys*, 2022. **(Selected for oral presentation)**

**B. London**. PAC Identifiability in Federated Personalization. *NeurIPS Workshop on Scalability, Privacy and Security in Federated Learning*, 2020. **(Selected for oral presentation)**

**B. London**, T. Joachims. Offline Policy Evaluation with New Arms. *NeurIPS Workshop on Offline Reinforcement Learning*, 2020.

**B. London**, T. Sandler. Bayesian Counterfactual Risk Minimization. *ICML Workshop on CausalML*, 2018.

**B. London**. Generalization Bounds for Randomized Learning with Application to Stochastic Gradient Descent. *NeurIPS Workshop on Optimizing the Optimizers*, 2016.

**B. London**, O. Meshi, A. Weller. Bounding the Integrality Distance of LP Relaxations for Structured Prediction. *NeurIPS Workshop on Optimization for Machine Learning*, 2016.

**B. London**, A. Schwing. Generative Adversarial Structured Networks. *NeurIPS Workshop on Adversarial Training*, 2016.

**B. London**, B. Huang, L. Getoor. On the Strong Convexity of Variational Inference. *NeurIPS Workshop on Advances in Variational Inference*, 2014.

**B. London**, B. Huang, B. Taskar, L. Getoor. PAC-Bayesian Generalization Bounds for Randomized Structured Prediction. *NeurIPS Workshop on Perturbations, Optimization and Statistics*, 2013. **(Selected for oral presentation)**

**B. London**, S. Khamis, S. Bach, B. Huang, L. Getoor, L. Davis. Collective Activity Detection using Hinge-loss Markov Random Fields. *CVPR Workshop on Structure Prediction: Tractability, Learning and Inference*, 2013. **(Selected for oral presentation)**

B. Huang, **B. London**, B. Taskar, L. Getoor. Empirical Analysis of Collective Stability. *ICML Workshop on Structured Learning (SLG)*, 2013.

**B. London**, B. Huang, L. Getoor. Improved Generalization Bounds for Large-scale Structured Prediction. *NeurIPS Workshop on Algorithmic and Statistical Approaches for Large Social Networks*, 2012.

**B. London**, T. Rekatsinas, B. Huang, L. Getoor. Multi-relational Weighted Tensor Decomposition. *NeurIPS Workshop on Spectral Learning*, 2012.

G. Namata, **B. London**, L. Getoor, B. Huang. Query-driven Active Surveying for Collective Classification. *ICML Workshop on Mining and Learning with Graphs*, 2012. **(Selected for oral presentation)**

J. Pujara, **B. London**, L. Getoor. Reducing Label Cost by Combining Feature Labels and Crowdsourcing. *ICML Workshop on Combining Label Strategies to Reduce Label Cost*, 2011.

### Book Chapters

**B. London**, L. Getoor. Collective Classification of Network Data. *Data Classification: Algorithms and Applications*, Charu Aggarwal. CRC Press, 2013.

### Technical Reports

**B. London**, T. Rekatsinas, B. Huang, L. Getoor. Multi-relational Learning Using Weighted Tensor Decomposition with Modular Loss. <http://arxiv.org/abs/1303.1733>, 2013.

**B. London**, B. Huang, L. Getoor. Graph-based Generalization Bounds for Learning Binary Relations. <http://arxiv.org/abs/1302.5348>, 2013.

## PROFESSIONAL SERVICE

Program Committee Member for: Algorithmic Learning Theory (ALT); Conference on Learning Theory (COLT); International Conference on Machine Learning (ICML); International Joint Conference on Artificial Intelligence (IJCAI); Journal of Machine Learning Research (JMLR); Neural Information Processing Systems (NeurIPS); Transactions of Knowledge Discovery from Data (TKDD); Uncertainty in Artificial Intelligence (UAI)

Area Chair for Neural Information Processing Systems (NeurIPS), 2020, 2021

Area Chair for the International Conference on Machine Learning (ICML), 2020, 2022

Sr. PC Member for the International Joint Conference on Artificial Intelligence (IJCAI), 2020

Co-organizer of the NeurIPS Workshop on Machine Learning with Guarantees, 2019

Program Chair for the Amazon Machine Learning Conference (AMLC), 2019

Co-organizer of the AMLC Workshop on Recommendation, 2018

Co-organizer of the AMLC Workshop on Deep Learning, 2017

Reviewer for the National Science Foundation (NSF), 2016

## AWARDS AND HONORS

NeurIPS 2019 Top 400 Reviewer

ICML 2019 Top 5% Reviewer

NeurIPS 2015 Top 20 Reviewer

## TEACHING

Introduction to Machine Learning at Amazon, *Instructor*, 2017.

Artificial Intelligence, *Teaching Assistant*, Spring 2013. Instructor: Lise Getoor.

Machine Learning, *Teaching Assistant*, Fall 2010. Instructor: Lise Getoor.