



- S. H. Bach, B. Huang, B. London, and L. Getoor. Hinge-loss Markov random fields: Convex inference for structured prediction. In *Uncertainty in Artificial Intelligence (UAI)*, 2013.
- S. H. Bach, M. Broecheler, L. Getoor, and D. P. O’Leary. Scaling MPE inference for constrained continuous Markov random fields with consensus optimization. In *Advances in Neural Information Processing Systems (NIPS)*, 2012.
- S. H. Bach and M. A. Maloof. A Bayesian approach to concept drift. In *Advances in Neural Information Processing Systems (NIPS)*, 2010.
- S. H. Bach\* and M. A. Maloof\*. Paired learners for concept drift. In *IEEE International Conference on Data Mining (ICDM)*, 2008.

### Demonstrations

- A. J. Ratner, S. H. Bach, H. E. Ehrenberg, and C. Ré. Snorkel: Fast training set generation for information extraction. ACM SIGMOD Conference on Management of Data (SIGMOD), 2017.

### Workshop Papers

- S. H. Bach, B. Huang, and L. Getoor. Rounding guarantees for message-passing MAP inference with logical dependencies. In *NIPS Workshop on Discrete and Combinatorial Problems in Machine Learning (DISCML)*, 2014.
- S. H. Bach, B. Huang, and L. Getoor. Probabilistic soft logic for social good. In *KDD Workshop on Data Science for Social Good*, 2014.
- G. Farnadi, S. H. Bach, M. Moens, L. Getoor, and M. De Cock. Extending PSL with fuzzy quantifiers. In *International Workshop on Statistical Relational Artificial Intelligence (StaRAI)*, 2014.
- S. H. Bach, B. Huang, and L. Getoor. Large-margin structured learning for link ranking. In *NIPS Workshop on Frontiers of Network Analysis: Methods, Models, and Applications*, 2013.  
**Best Student Paper Award.**
- S. H. Bach, B. Huang, and L. Getoor. Learning latent groups with hinge-loss Markov random fields. In *ICML Workshop on Inferring: Interactions between Inference and Learning*, 2013.
- B. London, S. Khamis, S. H. Bach, B. Huang, L. Getoor, and L. Davis. Collective activity detection using hinge-loss Markov random fields. In *CVPR Workshop on Structured Prediction: Tractability, Learning and Inference*, 2013.
- A. Kimmig, S. H. Bach, M. Broecheler, B. Huang, and L. Getoor. A short introduction to probabilistic soft logic. In *NIPS Workshop on Probabilistic Programming: Foundations and Applications*, 2012.
- B. Huang, S. H. Bach, E. Norris, J. Pujara, and L. Getoor. Social group modeling with probabilistic soft logic. In *NIPS Workshop on Social Network and Social Media Analysis: Methods, Models, and Applications*, 2012.
- A. Memory, A. Kimmig, S. H. Bach, L. Raschid, and L. Getoor. Graph summarization in annotated data using probabilistic soft logic. In *Proceedings of the International Workshop on Uncertainty Reasoning for the Semantic Web (URSW)*, 2012.
- S. H. Bach, M. Broecheler, S. Kok, and L. Getoor. Decision-driven models with probabilistic soft logic. In *NIPS Workshop on Predictive Models in Personalized Medicine*, 2010.

(\* Equal Contributors)

### Invited Talks

- Snorkel: Creating noisy training data to overcome machine learning’s biggest bottleneck. Workshop on Data Management for End-to-End Machine Learning (DEEM) at SIGMOD, May 14 2017.
- Large scale structured prediction and learning with hinge-loss MRFs. Department of Computer Science, University of California, Santa Cruz, March 4 2016.

Fast and accurate models for big graphs. InfoLab, Department of Computer Science, Stanford University, February 11 2015.

Fast and accurate models for big graphs. San Diego Supercomputer Center, University of California, San Diego, February 9 2015.

Statistical relational models for social good. Data Science DC, September 15 2014.

Scalable machine learning for big graphs with probabilistic soft logic. Charles River Analytics, Cambridge, MA, August 20 2014.

## Teaching Experience

### Teaching Assistant

Introduction to Artificial Intelligence

Fall 2011

Department of Computer Science, University of Maryland, College Park

### Teaching Assistant

Computer Science II

Spring 2008

Department of Computer Science, Georgetown University

## Honors and Awards

### Larry S. Davis Doctoral Dissertation Award

2015, Department of Computer Science, University of Maryland, College Park

### John D. Gannon Award for Outstanding Graduate Student

2013, Department of Computer Science, University of Maryland, College Park

### Computer Science Award

2010, Georgetown University

## Professional Activities

### National Science Foundation Peer Review Panelist

Division of Information and Intelligent Systems (IIS)

### Conference Program Committee / Reviewer

ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)

International Conference on Machine Learning (ICML)

International Joint Conference on Artificial Intelligence (IJCAI)

International World Wide Web Conference (WWW)

Neural Information Processing Systems (NIPS)

Uncertainty in Artificial Intelligence (UAI)

### Journal Reviewer

ACM Transactions on Knowledge Discovery in Data (TKDD)

Data Mining and Knowledge Discovery

IEEE Transactions on Knowledge and Data Engineering (TKDE)

IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)

Journal of Machine Learning Research (JMLR)

Statistical Analysis and Data Mining

### Workshop Program Committee

Automatic Knowledge Base Construction (AKBC)

Data Driven Discovery of Models (D3M)

Mining and Learning with Graphs (MLG)