

Jennifer A. Gillenwater

Levine Hall 302
3330 Walnut Street
Philadelphia, PA 19146

jengi@cis.upenn.edu
www.seas.upenn.edu/~jengi
410-790-3763

- EDUCATION** **University of Pennsylvania**, Philadelphia, PA
Ph.D. in Computer Science, December 2014. GPA: 3.93
Rice University, Houston, TX
B.S. in Electrical Engineering, Magna Cum Laude, May 2008. GPA: 3.91
Hong Kong University of Science and Technology, Hong Kong, China
Study abroad, Spring 2007. GPA: 4.27
- EXPERIENCE** **Summer Intern—Research:** Summer 2011, 2012; Fall 2012
Google Research, Mountain View, CA
Implemented determinantal point process algorithms—methods for balancing quality and diversity for subset selection problems—for photo and music applications. Prototyped in MATLAB and coded final product in C++.
- Course Instructor:** Fall 2011
University of Pennsylvania, Philadelphia, PA
Designed and taught *Intelligent Game Agents* with two other graduate students. Focused on teaching basic AI concepts such as DFAs, search, reinforcement learning, and supervised machine learning, in the context of programming competitions based on the annual Google AI Challenge task.
- Summer Intern—Research:** Summer 2010
Microsoft Research, Redmond, WA
Proposed a novel method for supervised learning of dependency parsers from relevance judgments. Applied this method to the task of re-ranking documents retrieved for long search queries. Implemented and tested method in C#.
- Teaching Assistant:** Fall 2009, 2010, 2012; Spring 2010
University of Pennsylvania, Philadelphia, PA
Aided with *CIS 520: Machine Learning* (fall) and *CIS 521: Intro to Artificial Intelligence* (spring) by designing homeworks and exams, crafting and presenting recitation lectures, and holding office hours. Contributed to extensive wiki lecture notes.
- Summer Intern—Software Testing:** Summer 2008
Microsoft, Redmond, WA
Analyzed performance bottlenecks in the conversion of Word, PowerPoint, Excel, and other document types to HTML as a part of the Office Live Workspaces team.
- Summer Intern—Computer Science:** Summer 2007
USC/ISI, Los Angeles, CA
Explored new probability-based methods of incorporating context into syntax-based translation rules for a statistical machine translation system.
- SKILLS** **Programming experience in** Java, C#, C++, MATLAB, Perl, and Python.
- ACTIVITIES
& HONORS** **New York Academy of Sciences Machine Learning Symposium:**
2nd (2014, 2011) and 4th (2010) place presenter award
UPenn Computational Linguistics Lunch Organizer:
September 2009 - December 2011
NSF Graduate Research Fellowship: Fall 2010 - Spring 2013
NSF IGERT Traineeship in Language Sciences: Fall 2008 - Spring 2010

RESEARCH INTERESTS **Machine learning:**
graphical models, submodular functions, spectral methods, semi-supervised learning

Natural language processing:
part-of-speech tagging, parsing, word alignment, summarization, information retrieval

PUBLICATIONS **Journals**

- [1] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Posterior Sparsity in Unsupervised Dependency Parsing. *Journal of Machine Learning Research (JMLR)*, 2011.
- [2] K. Ganchev, J. Graça, J. Gillenwater, and B. Taskar. Posterior Regularization for Structured Latent Variable Models. *Journal of Machine Learning Research (JMLR)*, 2010.

Conferences

- [3] J. Gillenwater, A. Kulesza, E. Fox, and B. Taskar. Expectation-Maximization for Learning Determinantal Point Processes. In *Proc. Neural Information Processing Systems (NIPS)*, 2014.
- [4] L. He, J. Gillenwater, and B. Taskar. Graph-Based Posterior Regularization for Semi-Supervised Structured Prediction. In *Proc. Conference on Computational Natural Language Learning (CoNLL)*, 2013.
- [5] J. Gillenwater, X. He, J. Gao, and L. Deng. End-to-End Learning of Parsing Models for Information Retrieval. In *Proc. International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2013.
- [6] J. Gillenwater, A. Kulesza, and B. Taskar. Near-Optimal MAP Inference for Determinantal Point Processes. In *Proc. Neural Information Processing Systems (NIPS)*, 2012.
- [7] J. Gillenwater, A. Kulesza, and B. Taskar. Discovering Diverse and Salient Threads in Document Collections. In *Proc. Empirical Methods in Natural Language Processing (EMNLP)*, 2012.
- [8] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Sparsity in Dependency Grammar Induction. In *Proc. Association for Computational Linguistics (ACL)*, 2010.
- [9] K. Ganchev, J. Gillenwater, and B. Taskar. Dependency Grammar Induction via Bitext Projection Constraints. In *Proc. Association for Computational Linguistics (ACL)*, 2009.
- [10] J. Gillenwater, G. Malecha, C. Salama, A. Zhu, W. Taha, J. Grundy, and J. O’Leary. Synthesizable High Level Hardware Descriptions. In *Proc. Partial Evaluation and Program Manipulation (PEPM)*, 2008.

Workshops, Colloquiums, Symposiums, Tech Reports, etc.

- [11] J. Gillenwater. Maximization of Non-Monotone Submodular Functions. Technical Report MS-CIS-14-01, University of Pennsylvania, 2014.
- [12] L. He, J. Gillenwater, and B. Taskar. Graph-Based Posterior Regularization for Semi-Supervised Structured Prediction. In *Proc. New York Academy of Sciences (NYAS) Machine Learning Symposium*, 2014.
- [13] J. Gillenwater, A. Kulesza, and B. Taskar. Large-Scale Modeling of Diverse Paths using Structured k-DPPs. In *Proc. New York Academy of Sciences (NYAS) Machine Learning Symposium*, 2011.
- [14] J. Gillenwater, A. Kulesza, and B. Taskar. Large-Scale Modeling of Diverse Paths using Structured k-DPPs. In *Proc. Mid-Atlantic Student Colloquium on Speech, Language, and Learning*, 2011.
- [15] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Sparsity in Dependency Grammar Induction. In *Proc. New York Academy of Sciences (NYAS) Machine Learning Symposium*, 2010.
- [16] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Sparsity in Grammar Induction. In *Proc. Neural Information Processing Systems (NIPS) Grammar Induction Workshop*, 2009.

- [17] J. Gillenwater, G. Malecha, C. Salama, A. Zhu, W. Taha, J. Grundy, and J. O’Leary. Formalizing and Enhancing Verilog. In *Proc. Technology and Talent for the 21st Century (TECHCON)*, 2007.
- [18] J. Gillenwater, G. Malecha, C. Salama, A. Zhu, W. Taha, J. Grundy, and J. O’Leary. Formalizing and Enhancing Verilog. In *Proc. Workshop on Hardware Design and Functional Languages (HFL)*, 2007.