

Jennifer A. Gillenwater

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- 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** **Postdoc in Electrical Engineering:** January-June 2015
University of Washington, Seattle, WA
Continued research on thesis topic (determinantal point processes) and investigated properties of related submodular functions.
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.
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 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 method for supervised learning of dependency parsers for the task of re-ranking documents retrieved for long search queries.
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.
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 Comp. Linguistics Lunch Organizer: Spring 2010 - Fall 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 **Thesis**
- [1] J. Gillenwater. *Approximate Inference for Determinantal Point Processes*. PhD thesis, University of Pennsylvania, 2014.
- Journals**
- [2] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Posterior Sparsity in Unsupervised Dependency Parsing. *Journal of Machine Learning Research (JMLR)*, 2011.
- [3] K. Ganchev, J. Graça, J. Gillenwater, and B. Taskar. Posterior Regularization for Structured Latent Variable Models. *Journal of Machine Learning Research (JMLR)*, 2010.
- Conferences**
- [4] J. Gillenwater, R. Iyer, B. Lusch, R. Kidambi, and J. Bilmes. Submodular Hamming Metrics. In *Proc. Neural Information Processing Systems (NIPS)*, 2015.
- [5] J. Gillenwater, A. Kulesza, E. Fox, and B. Taskar. Expectation-Maximization for Learning Determinantal Point Processes. In *Proc. Neural Information Processing Systems (NIPS)*, 2014.
- [6] 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.
- [7] 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.
- [8] J. Gillenwater, A. Kulesza, and B. Taskar. Near-Optimal MAP Inference for Determinantal Point Processes. In *Proc. Neural Information Processing Systems (NIPS)*, 2012.
- [9] 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.
- [10] J. Gillenwater, K. Ganchev, J. Graça, F. Pereira, and B. Taskar. Sparsity in Dependency Grammar Induction. In *Proc. Association for Computational Linguistics (ACL)*, 2010.
- [11] K. Ganchev, J. Gillenwater, and B. Taskar. Dependency Grammar Induction via Bitext Projection Constraints. In *Proc. Association for Computational Linguistics (ACL)*, 2009.
- [12] 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.**
- [13] J. Gillenwater. Maximization of Non-Monotone Submodular Functions. Technical Report MS-CIS-14-01, University of Pennsylvania, 2014.
- [14] 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.
- [15] 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.
- [16] 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.

- [17] 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.
- [18] 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.
- [19] 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.
- [20] 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.