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JANG SUN LEE

(aka. Karl Stratos)

- Employment** *Toyota Technological Institute at Chicago, Chicago, IL (June 2017—present)*  
**Research Assistant Professor**  
*Bloomberg L.P., New York, NY (August 2016—May 2017)*  
**Senior Research Scientist**  
*Columbia University, New York, NY (January 2017—May 2017)*  
**Adjunct Assistant Professor**
- Education** *Columbia University, New York, NY (September 2011—June 2016)*  
**Ph.D. in Computer Science** (Advisor: [Michael Collins](#))  
Thesis: [Spectral Methods for Natural Language Processing](#)  
*University of Rochester, Rochester, NY (August 2008—May 2011)*  
**Bachelor of Science in Computer Science**  
**Bachelor of Arts in Mathematics**  
**Minor in History**
- Research Areas** Natural language processing, machine learning (code at [GitHub](#))
- Funding** [Bloomberg Data Science Research Grant](#), 2018  
[NVIDIA GPU Grant](#), 2017
- Grades/Honors** GPA: 3.85/4.0, Magna Cum Laude  
GRE: V. 710/800 (98%), Q. 790/800 (91%), A. 5/6 (84%)  
The Phi Beta Kappa Society Member  
Golden Key International Honour Society Member  
The National Society of Collegiate Scholars Member  
Rush Rhees Scholarship Recipient (University of Rochester)  
Donald M. Barnard Award Recipient (University of Rochester)
- Publications** Daniel Edmiston and Karl Stratos. [Compositional Morpheme Embeddings with Affixes as Functions and Stems as Arguments](#). In Proceedings of ACL 2018, Workshop on Relevance of Linguistic Structure in Neural NLP  
Karl Stratos. [A Sub-Character Architecture for Korean Language Processing](#). In Proceedings of EMNLP 2017 (Short)

- Karl Stratos. [Entity Identification as Multitasking](#). In Proceedings of EMNLP 2017, Workshop on Structured Prediction for NLP
- Karl Stratos. [Reconstruction of Word Embeddings from Sub-Word Parameters](#). In Proceedings of EMNLP 2017, Workshop on Subword and Character Level Models in NLP
- Heejin Choi and Karl Stratos. [Handling Large Structural Costs in Neural Networks with Slack Rescaling](#). In Proceedings of ICML 2017, Workshop on Deep Structured Prediction
- Young-Bum Kim, Karl Stratos, and Dongchan Kim. [Adversarial Adaptation of Synthetic or Stale Data](#). In Proceedings of ACL 2017
- Young-Bum Kim, Karl Stratos, and Dongchan Kim. [Domain Attention with an Ensemble of Experts](#). In Proceedings of ACL 2017
- Young-Bum Kim, Karl Stratos, and Ruhi Sarikaya. [Frustratingly Easy Neural Domain Adaptation](#). In Proceedings of COLING 2016
- Young-Bum Kim, Karl Stratos, and Ruhi Sarikaya. [Domainless Adaptation by Constrained Decoding on a Schema Lattice](#). In Proceedings of COLING 2016
- Karl Stratos, Michael Collins, and Daniel Hsu. [Unsupervised Part-Of-Speech Tagging with Anchor Hidden Markov Models](#). In TACL 2016
- Young-Bum Kim, Karl Stratos, and Ruhi Sarikaya. [Scalable Semi-Supervised Query Classification Using Matrix Sketching](#). In Proceedings of ACL 2016 (Short)
- Karl Stratos, Michael Collins, and Daniel Hsu. [Model-based Word Embeddings from Decompositions of Count Matrices](#). In Proceedings of ACL 2015
- Young-Bum Kim, Karl Stratos, Ruhi Sarikaya, and Minwoo Jeong. [New Transfer Learning Techniques for Disparate Label Sets](#). In Proceedings of ACL 2015
- Young-Bum Kim, Karl Stratos, and Ruhi Sarikaya. [Pre-training of Hidden-Unit CRFs](#). In Proceedings of ACL 2015 (Short)
- Young-Bum Kim, Karl Stratos, Xiaohu Liu, and Ruhi Sarikaya. [Compact Lexicon Selection with Spectral Methods](#). In Proceedings of ACL 2015 (Short)
- Karl Stratos and Michael Collins. [Simple Semi-Supervised POS Tagging](#). In Proceedings of NAACL 2015 Workshop on Vector Space Modeling for NLP
- Young-Bum Kim, Minwoo Jeong, Karl Stratos, and Ruhi Sarikaya. [Weakly Supervised Slot Tagging with Partially Labeled Sequences from Web Search Click Logs](#). In Proceedings of NAACL 2015
- YoungHoon Jung, Karl Stratos, and Luca P. Carloni. [LN-Annotate: An Alternative Approach to Information Extraction from Emails using Locally-Customized Named-Entity Recognition](#). In Proceedings of WWW 2015
- Karl Stratos, Do-kyum Kim, Michael Collins, and Daniel Hsu. [A Spectral Algorithm for Learning Class-Based n-gram Models of Natural Language](#). In Proceedings of UAI 2014

- Shay B. Cohen, Karl Stratos, Michael Collins, Dean Foster and Lyle Ungar. [Spectral Learning of Latent-Variable PCFGs: Algorithms and Sample Complexity](#). In JMLR 2014
- Karl Stratos, Alexander M. Rush, Shay B. Cohen, and Michael Collins. [Spectral Learning of Refinement HMMs](#). In Proceedings of CoNLL 2013
- Shay B. Cohen, Karl Stratos, Michael Collins, Dean Foster and Lyle Ungar. [Experiments with Spectral Learning of Latent-Variable PCFGs](#). In Proceedings of NAACL 2013
- Shay B. Cohen, Karl Stratos, Michael Collins, Dean Foster and Lyle Ungar. [Spectral Learning of Latent-Variable PCFGs](#). In Proceedings of ACL 2012
- Margaret Mitchell, Xufeng Han, Jesse Dodge, Alyssa Mensch, Amit Goyal, Alex Berg, Kota Yamaguchi, Tamara Berg, Karl Stratos, and Hal Daumé III. [Midge: Generating image descriptions from computer vision detections](#). In Proceedings of EACL 2012
- Alexander C. Berg, Tamara L. Berg, Hal Daumé III, Jesse Dodge, Amit Goyal, Xufeng Han, Alyssa Mensch, Margaret Mitchell, Aneesh Sood, Karl Stratos, and Kota Yamaguchi. [Understanding and Predicting Importance in Images](#). In Proceedings of CVPR 2012
- Karl Stratos, Lenhart K. Schubert, and Jonathan Gordon. [Episodic Logic: Natural Logic + Reasoning](#). In Proceedings of KEOD 2011
- Lenhart Schubert, Jonathan Gordon, Karl Stratos, and Adina Rubinoﬀ. [Towards Adequate Knowledge and Natural Inference](#). In Proceedings of AAI Fall Symposium on Advances in Cognitive Systems 2011

### Teaching

- 2018 Co-Instructor with Suriya Gunasekar, [Introduction to Machine Learning Summer School](#), Toyota Technological Institute at Chicago, Summer
- 2017 Instructor, Natural Language Processing, Columbia University, Spring
- 2013 Teaching Assistant, Advanced Machine Learning, Daniel Hsu, Columbia University, Fall
- 2012 Teaching Assistant, Machine Learning for Natural Language Processing, Michael Collins, Columbia University, Spring
- 2011 Teaching Assistant, Introduction to Artificial Intelligence, George Ferguson, University of Rochester, Spring
- 2010 Teaching Assistant, Computation and Formal Systems (designed a new Prolog project), Christopher Brown, University of Rochester, Fall
- 2010 Workshop Leader, Introduction to Computer Science, University of Rochester, Spring

### Academic Internships

- 2014 Research Intern, *Google Inc.*, June–August. Worked with Slav Petrov and Emily Pitler.

- 2013 Research Intern, *Microsoft*, June–August. Worked with Sham Kakade and T. J. Hazen.
- 2011 Summer Workshop, *Johns Hopkins University Center for Language and Speech Processing*, July–August. Worked with Alexander and Tamara Berg.
- 2010 Research Intern, *University of Rochester*, June–August. Worked with Lenhart Schubert.

Professional  
Activities

Conference/Journal Reviewing:

- AAAI: 2018, 2019
- ACL: 2014, 2015, 2016, 2017, 2018
- COLING: 2017, 2018
- CONLL: 2018
- EACL: 2017
- EMNLP: 2015, 2016, 2017
- ICLR: 2018
- ICML: 2014, 2015, 2016, 2017, 2018
- IJCNLP: 2017
- JMLR: 2018
- NAACL: 2015, 2016, 2018
- NIPS: 2014, 2015, 2017, 2018

Area Chair: Machine Learning, EMNLP, 2018

Co-Organizer, [Introduction to Machine Learning Summer School](#), Toyota Technological Institute at Chicago, Summer

Invited Speaker, *13th Joint CS Seminar at Toyota Technological Institute*, 2017

Invited Speaker, *CSE Seminar Series, University of Notre Dame*, 2017

Invited Speaker, *COLING Young Researchers Symposium on Natural Language Processing*, 2016

Program Committee, *ACL Workshop on Relevance of Linguistic Structure in Neural Architectures for NLP*, 2018

Program Committee, *ACL Workshop on Representation Learning for NLP*, {2016, 2017}

Program Committee, *ACL Workshop on Evaluating Vector Space Representations for NLP*, {2016, 2017}

Program Committee, *NAACL Workshop on Vector Space Modeling for NLP*, 2015

NAACL 2013 Tutorial, *Spectral Learning Algorithms for Natural Language Processing* with Shay Cohen, Michael Collins, Dean Foster, and Lyle Ungar

Program Committee, *Mid-Atlantic Student Colloquium on Speech, Language and Learning*, 2012

Misc

Political Intern, *Korean National Assembly*, Summer 2009