

1148 Kelley Engineering Center

Corvallis, Oregon 97331

kzhao.hf@gmail.com

<http://kaizhao.me>

KAI ZHAO

research interests

Algorithms and theory in Natural Language Processing: Structured Prediction, Deep Learning, Online Learning, Syntactic/Semantic Parsing, Machine Translation, and Textual Entailment.

education

Ph.D Candidate, *Oregon State University*, Corvallis, OR. 2015 - present.

Mentor: Professor Liang Huang

Major: Computer Science

Ph.D Student, *Graduate Center, City University of New York*, New York, NY. 2010 - 2015.

Mentor: Professor Liang Huang

Major: Computer Science

B.Eng., *University of Science and Technology of China*, Hefei, China. 2006 - 2010.

Graduated with Honors

Major: Computer Science

experience

Research Assistant, *Oregon State University*, Corvallis, OR. 2015 - present.

Research Assistant, *City University of New York*, New York, NY. 2012 - 2015.

Focused on Structured Prediction problems in Natural Language Processing, including:

- deep learning for structured prediction in textual entailment; [1]
- incremental semantic parsing; [4]
- incremental parsing with best-first search strategy; [6]
- discriminative training for statistical machine translation; [5]
- parallelizing online learning for large-scale NLP tasks. [10]

Research Intern, *Google Inc.*, New York, NY. Summer 2015.

Structured Data Team

Mentor: Hao Zhang, Cong Yu and Flip Korn

Investigated inducing entity similarities from web table corpus with an alignment model.

Research Intern, *Microsoft Research*, Redmond, WA. Summer 2014.

Machine Translation Group

Mentor: Hany Hassan and Michael Auli

Explored learning translation rules from monolingual continuous representations. [3]

Research Intern, *IBM T.J. Watson Research Center*, Yorktown Heights, NY. Summer 2013.

Multilingual Natural Language Processing Group

Mentor: Abe Ittycheriah and Haitao Mi

Adapted large-scale discriminative training to syntax based machine translation system. [5]

publications

tags: [MT]: machine translation; [Parsing]: syntactic/semantic parsing; [SP]: structured prediction; [DL]: deep learning; [OL]: online learning.

1. Kai Zhao, Liang Huang, and Mingbo Ma. “Textual Entailment with Structured Attentions and Composition.” To appear in *Proceedings of COLING*, 2016. [DL]
2. Feifei Zhai, Liang Huang, and Kai Zhao. “[Search-Aware Tuning for Hierarchical Phrase-based Decoding](#).” *Proceedings of EMNLP*, 2015. [MT][SP]
3. Kai Zhao, Hany Hassan, and Michael Auli. “[Learning Translation Models from Monolingual Continuous Representations](#).” *Proceedings of NAACL*, 2015. [MT][DL]
4. Kai Zhao and Liang Huang. “[Type-driven Incremental Semantic Parsing with Polymorphism](#).” *Proceedings of NAACL*, 2015. [Parsing][SP]
5. Kai Zhao, Liang Huang, Haitao Mi, and Abe Ittycheriah. “[Hierarchical MT Training using Max-Violation Perceptron](#).” *Proceedings of ACL*, 2014. [MT][SP]
6. Kai Zhao, James Cross, and Liang Huang. “[Optimal Incremental Parsing via Best-First Dynamic Programming](#).” *Proceedings of EMNLP*, 2013. [Parsing]
7. Heng Yu, Liang Huang, Haitao Mi, and Kai Zhao. “[Max-Violation Perceptron and Forced Decoding for Scalable MT Training](#).” *Proceedings of EMNLP*, 2013. [MT][SP]
8. Hao Zhang, Liang Huang, Kai Zhao, and Ryan McDonald. “[Online Learning for Inexact Hypergraph Search](#).” *Proceedings of EMNLP*, 2013. [Parsing][OL]
9. Yoav Goldberg, Kai Zhao, and Liang Huang. “[Efficient Implementation of Beam-Search Incremental Parsers](#).” *Proceedings of ACL*, 2013. [Parsing]
10. Kai Zhao and Liang Huang. “[Minibatch and Parallelization for Online Large Margin Structured Learning](#).” *Proceedings of NAACL*, 2013. [OL]

tutorial Liang Huang, Kai Zhao, and Lemao Liu. “[Scalable Large-Margin Structured Learning: Theory and Algorithms](#).” *ACL*, 2014.

teaching **Teaching Assistant** for:

1. CS 480: Translators (Compilers, Interpreters), *Oregon State University*. Winter 2016.
2. CS 321: Theoretical Computer Science, *Oregon State University*. Fall 2015.
3. CSc 71010: Programming Languages, *Graduate Center, CUNY*. Fall 2013.
4. CSc 84010: Machine Learning, *Graduate Center, CUNY*. Spring 2013.
5. CS 3813/780: Python & Text Processing, *Queens College, CUNY*. Fall 2012.

honors & awards **Science Fellowship**, *Graduate Center, City University of New York*. 2010 & 2011.
National Scholarship, *Ministry of Education of China*. 2009.
Outstanding Student Scholarship, *University of Science and Technology of China*. 2008.