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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.
- experience**
- Research Scientist**, *Google Inc.*, New York, NY. Jun.2017–present.
Focused on query understanding.
- Research Assistant**, *Oregon State University*, Corvallis, OR. Sep.2015–Jun.2017.
- Research Assistant**, *City University of New York*, New York, NY. Aug.2012–Sep.2015.
Studied Structured Prediction problems in Natural Language Processing, including:
- deep learning for structured prediction in textual entailment; [4]
 - incremental semantic parsing; [7]
 - incremental parsing with best-first search strategy; [9]
 - discriminative training for statistical machine translation; [8]
 - parallelizing online learning for large-scale NLP tasks. [13]
- 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 alignment models.
- 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. [6]
- 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. [8]
- education**
- Ph.D.**, *Oregon State University*, Corvallis, OR. 2015–2017.
- Ph.D. Student**, *Graduate Center, City University of New York*, New York, NY. 2010–2015.
Mentor: Liang Huang
Major: Computer Science
Thesis: [Structured Learning with Latent Variables: Theory and Algorithms](#)
Committee: Prasad Tadepalli, Alan Fern, Debashis Mondal, Luke Zettlemoyer (UW)
- B.Eng.**, *University of Science and Technology of China*, Hefei, China. 2006–2010.
Graduated with Honors
Major: Computer Science

publications

1. Kai Zhao and Liang Huang. “Joint Syntacto-Discourse Parsing and the Syntacto-Discourse Treebank.” *Proceedings of EMNLP*, 2017.
2. Liang Huang, Kai Zhao and Mingbo Ma. “When to Finish? Optimal Beam Search for Neural Text Generation (modulo beam size).” *Proceedings of EMNLP*, 2017.
3. Mingbo Ma, Kai Zhao, Liang Huang, Bing Xiang and Bowen Zhou. “Jointly Trained Sequential Labeling and Classification by Sparse Attention Neural Networks.” *Proceedings of Interspeech*, 2017.
4. Kai Zhao, Liang Huang, and Mingbo Ma. “Textual Entailment with Structured Attentions and Composition.” *Proceedings of COLING*, 2016.
5. Feifei Zhai, Liang Huang, and Kai Zhao. “Search-Aware Tuning for Hierarchical Phrase-based Decoding.” *Proceedings of EMNLP*, 2015.
6. Kai Zhao, Hany Hassan, and Michael Auli. “Learning Translation Models from Monolingual Continuous Representations.” *Proceedings of NAACL*, 2015.
7. Kai Zhao and Liang Huang. “Type-driven Incremental Semantic Parsing with Polymorphism.” *Proceedings of NAACL*, 2015.
8. Kai Zhao, Liang Huang, Haitao Mi, and Abe Ittycheriah. “Hierarchical MT Training using Max-Violation Perceptron.” *Proceedings of ACL*, 2014.
9. Kai Zhao, James Cross, and Liang Huang. “Optimal Incremental Parsing via Best-First Dynamic Programming.” *Proceedings of EMNLP*, 2013.
10. Heng Yu, Liang Huang, Haitao Mi, and Kai Zhao. “Max-Violation Perceptron and Forced Decoding for Scalable MT Training.” *Proceedings of EMNLP*, 2013.
11. Hao Zhang, Liang Huang, Kai Zhao, and Ryan McDonald. “Online Learning for Inexact Hypergraph Search.” *Proceedings of EMNLP*, 2013.
12. Yoav Goldberg, Kai Zhao, and Liang Huang. “Efficient Implementation of Beam-Search Incremental Parsers.” *Proceedings of ACL*, 2013.
13. Kai Zhao and Liang Huang. “Minibatch and Parallelization for Online Large Margin Structured Learning.” *Proceedings of NAACL*, 2013.

tutorial

- Liang Huang, Kai Zhao, and Lemao Liu. “Scalable Large-Margin Structured Learning: Theory and Algorithms.” *ACL*, 2014.