

Work Experience

Applied Scientist, Microsoft 2018 – 2020

- Worked on Microsoft Word rewriting feature to generate paraphrases for multi-word phrases in context
- Supervised collection of data and annotations in order to fine-tune large transformer models
- Applied knowledge distillation methods to produce small and accurate models for production
- Developed compact task-specific encodings to improve model efficiency

Research Assistant, University of Illinois 2012 – 2018

- Developed models to explore the effectiveness of different semantic representations, achieving competitive performance on downstream tasks like textual entailment and sentence similarity
- Implemented and maintained a relational database to store a structured graph of image caption information

Research Intern, Grammarly Sept 2017 – Dec 2017

- Collected the first dataset for real-world text coherence across multiple genres
- Designed and tested annotation guidelines, and managed annotators throughout the data collection process
- Reimplemented previous coherence models and analyzed their performance on new real-world coherence task
- Developed new paragraph-aware neural network model of text coherence

Teaching Assistant, Machine Learning, University of Illinois Aug 2016 – Dec 2016

- Assisted individual students in understanding the course material in weekly office hours
- Helped develop content for weekly discussion sections of 10-20 students
- Wrote homework assignments, weekly quizzes, exam questions, and grading rubrics

Product Search Software Development Intern, Amazon A9 May 2016 – Aug 2016

- Developed annotation guidelines and labeled data to map queries to a knowledge base
- Developed text features and wrote production code to extract these features from queries
- Analyzed accuracy and efficiency of features and implemented pruning strategies to improve performance

Education

Ph.D. Computer Science, University of Illinois at Urbana-Champaign 2012 – 2018

Natural Language Processing and Machine Learning

Thesis: *Textual Entailment from Image Caption Denotations*

Advisor: Julia Hockenmaier

Committee: Katrin Erk, Dan Roth, ChengXiang Zhai

Supported by a National Science Foundation Graduate Research Fellowship from 2012–2015

B.S. Computer Science, B.A. Japanese, University of Pittsburgh 2008 – 2012

Publications

Alice Lai and Joel Tetreault. **Discourse Coherence in the Wild: A Dataset, Evaluation, and Methods.** *Special Interest Group on Discourse and Dialogue (SIGDIAL)*, 2018.

Alice Lai, Yonatan Bisk, and Julia Hockenmaier. **Natural Language Inference from Multiple Premises.** *International Joint Conference on Natural Language Processing*, 2017.

Alice Lai and Julia Hockenmaier. **Learning to Predict Denotational Probabilities For Modeling Entailment.** *European Chapter of the Association for Computational Linguistics*, 2017.

Alice Lai and Julia Hockenmaier. **Illinois-LH: A Denotational and Distributional Approach to Semantics.** *International Workshop on Semantic Evaluation (SemEval)*, 2014.

Peter Young, Alice Lai, Micah Hodosh, and Julia Hockenmaier. **From image description to visual denotations: New similarity metrics for semantic inference over event descriptions.** *Transactions of the Association for Computational Linguistics Vol. 2*, 2014.

Skills

Primary programming languages: Python, Java

Implemented models using deep learning libraries: PyTorch, Tensorflow

Familiar with NLP toolkits, including Stanford CoreNLP, OpenNLP, NLTK

Service

Reviewer

- Grace Hopper Conference AI Technical Track (2019)
- Association for Computational Linguistics (ACL) (2019)
- ACL Student Research Workshop (2018, 2019)
- N. American Chapter of the Association for Computational Linguistics (NAACL) (2018)
- International Conference on Computational Linguistics (Coling) (2018)

Artificial Intelligence Seminar Organizer, University of Illinois 2015 – 2018

- Coordinated with professors and students to schedule visiting speakers to the department

Secretary & Website Manager, UIUC Graduate Society of Women Engineers 2015 – 2017

- Coordinated with committee members to send weekly newsletter, maintained website of upcoming events