Wei Fang

PhD Student at MIT CSAIL

weifang@mit.edu | people.csail.mit.edu/weifang | peskotivesgeroff | wei-fang-tw | Wei Fang

Research Interests

I am generally interested in machine learning for natural language and speech, in particular language understanding, learning and analyzing representations, and transfer learning for NLP and speech.

Education

Massachusetts Institute of Technology (MIT) — *Cambridge, USA*

PhD Student — *Sep. 2018 - PRESENT*

- Computer Science & Artificial Intelligence Laboratory (CSAIL), Advisor: Dr. James Glass

National Taiwan University (NTU) — *Taipei, Taiwan*

Bachelor of Science in Engineering — *Sep. 2013 - Jan. 2018*

- Department of Electrical Engineering, GPA: 4.16/4.3

Experience

Spoken Language Systems Group, MIT CSAIL — *Cambridge, USA*

Research Assistant, supervised by Dr. James Glass — *Sep. 2018 - PRESENT*

- Worked on automatic fact-checking, focusing on improving the subtask of stance detection with multi-task transfer learning. **[NAACL-2019-Demo] [EMNLP-2019-Workshop]**
- Worked on improving end-to-end speech synthesis with pre-trained natural language representations.

Natural Language Processing Team, Apple Inc. — *Cupertino, USA*

NLP Intern — *Jul. 2018 - Aug. 2018*

- Research internship on the NLP Team.

Vision & Learning Lab, NTU & Academia Sinica — *Taipei, Taiwan*

Undergraduate Researcher, supervised by Prof. Yu-Chiang Frank Wang — *Jul. 2016 - Jan. 2018*

- Proposed a deep learning architecture that incorporates knowledge graphs for multi-label zero-shot recognition. **[CVPR-2018]**
- Helped review conference papers for ICME 2017 and ICCV 2017.

Natural Language Processing Team, Apple Inc. — *Cupertino, USA*

NLP Intern — *Jun. 2017 - Sep. 2017*

- Researched on input representations for neural models to improve keyboard experience for users.

Speech Processing & Machine Learning Lab, NTU — *Taipei, Taiwan*

Undergraduate Researcher, supervised by Prof. Hung-Yi Lee & Prof. Lin-Shan Lee — *Sep. 2015 - Jun. 2017*

- Proposed a hierarchical attention-based model for the TOEFL Listening Comprehension Test by machine. **[SLT-2016] [TASLP-2019]**
- Researched on unsupervised audio word embeddings and helped develop a demo system.

National Taiwan University — *Taipei, Taiwan*

Teaching Assistant — *Feb. 2016 - Jun. 2017*

- EE5177/EE5184 Machine Learning (Fall 2016/Spring 2017) - Instructor: Prof. Hung-Yi Lee
- CSIE5610 Data Analytics & Modeling (Fall 2016) - Instructor: Prof. Biing-Hwang Juang (GaTech)
- EE2011 Signals and Systems (Spring 2016) - Instructor: Prof. Lin-Shan Lee

Publications

[1] **Wei Fang**, Moin Nadeem, Mitra Mohtarami, James Glass. "Neural Multi-task Learning for Stance Prediction". *In EMNLP-IJCNLP Workshop on Fact Extraction and VERification*, 2019. [link]

[2] **Wei Fang**, Yu-An Chung, James Glass. "Towards Transfer Learning for End-to-end Speech Synthesis from Deep Pre-trained Language Models". *Technical Report*, 2019. [link]

[3] Chia-Hsuan Lee, Hung-Yi Lee, Szu-Lin Wu, Chi-Liang Liu, **Wei Fang**, Jui-Yang Hsu, Bo-Hsiang Tseng. "Machine Comprehension of Spoken Content: TOEFL Listening Test and Spoken SQuAD". *In IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP)*, 2019. [link]

[4] Moin Nadeem, **Wei Fang**, Brian Xu, Mitra Mohtarami, James Glass. "FAKTA: An Automatic End-to-End Fact Checking System". *In Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, 2019. [link]

[5] Chung-Wei Lee†, **Wei Fang**†, Chih-Kuan Yeh, Yu-Chiang Frank Wang. "Multi-Label Zero-Shot Learning with Structured Knowledge Graphs". *In IEEE Conference on Computer Vision & Pattern Recognition (CVPR)*, 2018. [link]

[6] **Wei Fang**†, Jui-Yang Hsu†, Hung-Yi Lee, Lin-Shan Lee. "Hierarchical Attention Model for Improved Comprehension of Spoken Content". *In IEEE Workshop on Spoken Language Technology (SLT)*, 2016. [link]

† indicates equal contribution

Honors & Awards

Student Travel Bursary, Amazon — *Oct. 2019*
EECS Great Educators Fellowship, MIT EECS — *Feb. 2018*
Dean's List (3 times), NTU Electrical Engineering — *Fall '14, Spring '15, Fall '16*
Conference Grant, Foundation for the Advancement of Outstanding Scholarship — *Dec. 2016*
Winner of Smart Life Track (out of 160 teams), 2016 HackNTU Hackathon — *Aug. 2016*
3rd Place (Problem B), CAD Contest 2015 at IEEE/ACM Int'l Conf. on Computer Aided Design (ICCAD) — *Nov. 2015*
6th Place (out of 250 teams), 2015 HackNTU Hackathon — *Aug. 2015*

Skills

Languages Python, C++, Shell scripting, Matlab
Libraries/Toolkits PyTorch, Tensorflow
OS GNU/Linux (Ubuntu & Arch Linux), Mac OSX
Other Git, LaTeX