Wei Fang

Incoming PhD Student, MIT CSAIL

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Research Interests

Natural language and speech processing, machine and deep learning, and artificial intelligence.

Education

Massachusetts Institute of Technology (MIT) — *Enrolling in Sep. 2018*
PhD Student — *Cambridge, USA*

- Computer Science & Artificial Intelligence Laboratory (CSAIL), Department of EECS

National Taiwan University (NTU) — *Sep. 2013 - Jan. 2018*
Bachelor of Science in Engineering — *Taipei, Taiwan*

- Department of Electrical Engineering, GPA: 4.16/4.3

Publications

Multi-Label Zero-Shot Learning with Structured Knowledge Graphs | arXiv link — *Jun. 2018*
Chung-Wei Lee†, *Wei Fang*†, Chih-Kuan Yeh, Yu-Chiang Frank Wang.
To appear in 2018 IEEE Conference on Computer Vision & Pattern Recognition (CVPR 2018) — *Salt Lake City, USA*

- Proposed a deep learning architecture that incorporates knowledge graphs for multi-label zero-shot recognition.

Hierarchical Attention Model for Improved Comprehension of Spoken Content | arXiv link — *Dec. 2016*
Wei Fang†, Jui-Yang Hsu†, Hung-Yi Lee, Lin-Shan Lee.
Published in 2016 IEEE Workshop on Spoken Language Technology (SLT 2016) — *San Diego, USA*

- Proposed a hierarchical attention-based neural model for the TOEFL Listening Comprehension Test by machine.

† indicates equal contribution

Research Experience

Undergraduate Researcher, supervised by Prof. Yu-Chiang Frank Wang — *Jul. 2016 - Jan. 2018*
Multimedia & Machine Learning Lab, Center for IT Innovation, Academia Sinica
Vision & Learning Lab, NTU Electrical Engineering — *Taipei, Taiwan*

- Researched on ranking learning, multi-label learning and transfer learning with deep learning techniques.
- First-authored paper "Multi-Label Zero-Shot Learning with Structured Knowledge Graphs" to appear in CVPR 2018.
- Helped review conference papers for ICME 2017 and ICCV 2017.

Undergraduate Researcher, supervised by Prof. Hung-Yi Lee & Prof. Lin-Shan Lee — *Sep. 2015 - Jun. 2017*
Speech Processing & Machine Learning Lab, NTU Electrical Engineering — *Taipei, Taiwan*

- Researched on language and speech processing, with focus on language understanding and representation learning.
- Published the paper "Hierarchical Attention Model for Improved Comprehension of Spoken Content".
- Researched on unsupervised audio word embeddings and helped develop a demo system.

Work Experience

Private, ROC Army — *Feb. 2018 - PRESENT*
ROC Armed Forces — *Taiwan*

- Currently completing mandatory service in the Republic of China (Taiwan) Army.

NLP Intern, Natural Language Processing Team — *Jun. 2017 - Sep. 2017*
Apple Inc. — *Cupertino, USA*

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

Teaching Experience

Teaching Assistant *Feb. 2016 - Jun. 2017*

National Taiwan University *Taipei, Taiwan*

- 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

Honors & Awards

EECS Great Educators Fellowship, MIT EECS *Feb. 2018*

Dean's List (3 times), National Taiwan University *Fall '14, Spring '15, Fall '16*

GPA in top 5% in EE department

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*

2nd Place (out of 15 research projects), Undergraduate Innovation Award, NTU Electrical Engineering *May 2016*

3rd Place (Problem B), CAD Contest 2015 at IEEE/ACM Int'l Conf. on Computer Aided Design (ICCAD) *Nov. 2015*

Total of 112 teams from 12 countries for the 3 problems

6th Place and #10 in Popularity (out of 250 teams), 2015 HackNTU Hackathon *Aug. 2015*

Selected Projects

Sketch-based Image Retrieval over Style Domains *Nov. 2017 - Jan. 2018*

for CSIE5130 (Multimedia Analysis & Indexing)

- Approached sketch-based image retrieval over different style domains with convnets.

Department Store Chatbot *Feb. 2017 - Jun. 2017*

for CSIE5440 (Intelligent Conversational Bot)

- Built a modular dialogue system with deep learning techniques for the task of assisting people in department stores.

Deep Learning for Visual Question Answering *Nov. 2015 - Jan. 2016*

for CommE5045 (Deep and Structured Learning)

- Developed an attention-based deep neural model for answering multiple-choice questions about images.
- Won **2nd Prize** of the Undergraduate Innovation Award hosted by NTUEE and **1st prize** in CommE5045 course projects.

Skills

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

Extracurricular Activity

Vice Director of Academic Department, Student Association of NTUEE *Jun. 2015 - Sep. 2016*

- Arranged academic activities such as talks, course selection, and workshops.
- Co-organized the 1st MakeNTU, a hardware hackathon for NTUEE students in May 2016.