

Bin Wang

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RESEARCH INTERESTS

- Statistical Machine Learning, Deep Learning, Subspace Learning.
- Applications in Natural Language Processing, Computer Vision.

EDUCATION

- **University of Southern California (USC)** Los Angeles, USA
Ph.D. in Electrical Engineering; Minor in Computer Science; Advisor: C.-C. Jay Kuo
Jul 2017 - Present
- **University of Southern California (USC)** Los Angeles, USA
M.S. in Electrical Engineering; Advisor: C.-C. Jay Kuo
Jul 2017 - May 2019
- **University of Electronic Science and Technology of China (UESTC)** Chengdu, China
B.Eng in Electronic Information Engineering; GPA: 92.4/100;
Sep 2013 - Jun 2017
- **City University of Hong Kong (CityU)** Kowloon, HK
Exchange Student in Electrical and Electronics Engineering; GPA: 4.3/4.3
Sep 2015 - Jan 2016

EXPERIENCE

- **Aircraft Smart Maintenance Project** Los Angeles, USA
Research Assistant; USC; Advisor: C.-C. Jay Kuo
Jul 2017 - Aug 2018
 - **Video Caption:** Built deep learning model to learn inter-model (visual, language) translation.
 - **Video Summarization:** Incorporated machine learning models for unsupervised video summarization.
 - **Video Communication:** Developed video streaming module using WebRTC on Moverio BT-300 smart glasses.
- **Nuclei Detection on Breast Cancer Histopathology Images** Chengdu, China
Undergraduate Thesis; Advisor: Jin Qi
Oct 2016 - Jun 2017
 - **Data Collection:** Collected and pre-processed breast histopathological images with annotations.
 - **Detection:** Developed real-time detection framework using deep learning with MatConvNet toolkit.
- **Hand Gesture Recognition and Motion Estimation Project** Toronto, Canada
Research Intern; University of Ontario Institute of Technology; Advisor: Haoxiang Lang
Jul 2016 - Oct 2016
 - **SLAM:** Developed Simultaneous Localization and Mapping on Turtlebot Robot.
 - **Image Processing:** Focused on human hand gesture recognition using RGB-Depth image with Kinect 1.0/2.0.

PUBLICATION

1. **Graph Representation Learning: A Survey**
Fenxiao Chen, Yunchen Wang, **Bin Wang** and C-C Jay Kuo
arXiv Pre-print:1909.00958, 2019.
2. **Evaluating Word Embedding Models: Methods and Experimental Results**
Bin Wang*, Angela Wang*, Fenxiao Chen, Yunchen Wang, and C.-C. Jay Kuo.
APSIPA Transactions on Signal and Information Processing, 8, E19, 2019.
3. **K-covers for active learning in image classification**
Yeji Shen, Yuhang Song, Hanhan Li, Shahab Kamali, **Bin Wang** and C.-C. Jay Kuo.
2019 IEEE International Conference on Multimedia and Expo (ICME) Workshop. IEEE, 2019.
4. **Deepwalk-assisted Graph PCA (DGPCA) for language networks**
Fenxiao Chen, **Bin Wang** and C.-C. Jay Kuo.
2019 International Conference on Acoustics, Speech and Signal Processing (ICASSP). IEEE, 2019.
5. **Post-Processing of Word Representations via Variance Normalization and Dynamic Embedding**
Bin Wang, Fenxiao Chen, Angela Wang, and C.-C. Jay Kuo.
2019 IEEE International Conference on Multimedia and Expo (ICME). IEEE, 2019.
6. **Hand gesture recognition and motion estimation using the Kinect Sensor**
Bin Wang, Yunze Li, Haoxiang Lang and Ying Wang.
Mechatronic Systems and Control, 2019.
7. **Graph-based Deep-Tree Recursive Neural Network (DTRNN) for Text Classification**
Fenxiao Chen, **Bin Wang**, and C.-C. Jay Kuo.
Spoken Language Technology Workshop (SLT), IEEE, 2018.

HONORS AND AWARDS

- **Excellent Graduate of Sichuan Province**, (top 2% of senior students) 2017
- **Tanglixin Scholarship**, 2017
- **National Scholarship, China**, (top 2% of undergraduate students) 2015.
- **National Scholarship, China**, (top 2% of undergraduate students) 2016.
- **Outstanding Student Leadership Award**, 2014
- **Samsung Scholarship**, (industry scholarship) 2014

TEACHING EXPERIENCE

- **Department of Electrical and Computer Engineering, USC** Los Angeles, USA
Lab TA for Antonio Ortega: EE141L Applied Linear Algebra for Engineering Aug 2019 - Dec 2019
 - Design lab materials, edit exams, conduct office hours, prepare solutions for 100 students.
- **Department of Electrical and Computer Engineering, USC** Los Angeles, USA
TA for Robert Popoli: EE483 Introduction to Digital Signal Processing Jan 2019 - May 2019
 - Design discussion materials, lead discussion sessions, conduct office hours, prepare homework solutions, grade exams for 50 students.
- **Department of Electrical and Computer Engineering, USC** Los Angeles, USA
TA for Richard M. Leahy: EE483 Introduction to Digital Signal Processing Aug 2018 - Dec 2018
 - Design discussion materials, lead discussion sessions, conduct office hours, prepare homework solutions, grade exams for 80 students.

RELEVANT COURSEWORK

- F19: CSCI567 Machine Learning
- S19: CSCI599 Deep Learning and its Applications
- S19: EE596 Wavelets and Graphs for Signal Processing and Machine Learning
- F18: CSCI570 Analysis of Algorithms
- S18: EE569 Introduction to Digital Image Processing
- S18: EE562 Random Processes in Engineering
- F17: EE503 Probability for Electrical and Computer Engineers
- F17: EE510 Linear Algebra for Engineering
- F17: EE483 Introduction to Digital Signal Processing

SKILLS SUMMARY

- **Languages:** English, Mandarin
- **Programming Languages:** Python, C/C++, Matlab
- **Tools:** Tensorflow, PyTorch, Sklearn, MatConvNet, Linux, Git, L^AT_EX, WebRTC, OpenCV
- **Experience:** Machine Learning, Deep Learning, Natural Language Processing, Computer Vision

Last Update: 10/17/19