

Juncheng (Billy) Li



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<https://scholar.google.com/citations?hl=en&user=fBnAdIkAAAAJ>

ABOUT ME

"With multi-disciplinary knowledge background and a clear focus on robust deep learning in multi-modal machine learning, I have prepared myself to delve into more challenging research problems, solve them and create something of value to the real-world!"

RESEARCH INTEREST

Robust Deep Learning
Multimodal Machine Learning
Natural language Processing
Audio / Speech Processing

WORK EXPERIENCE

◆ Deep Learning Research Engineer

Bosch Center for Artificial Intelligence

Jul 2018 - Aug 2019 | Pittsburgh, PA

- Exploring applications of robust machine learning algorithms under industrial settings and solve real world problems.
- Researching novel approaches beyond state-of-the-art AI systems and generate publications in AI field at top-tier academic venues.

Research Engineer (Software Engineering)

◆ Bosch Research and Technology Center

Apr 2015 - June 2018 | Pittsburgh, PA

- Designed, Developed, and tested a 3D visualization platform based on BIM (Building Information Model) for Smart Campus sensor network (XMPP protocol) using Java at backend and Javascript at frontend. Developing another framework in Python and Flask environment to perform sensor data mining.
- Developing an audio analytic platform for infrastructure monitoring and machinery monitoring using deep learning techniques.

◆ Data Analysis Research Intern

Pittsburgh Port Authority

May 2014 - Sep 2014 | Pittsburgh, PA

Created a backend database for Pittsburgh transportation dataset and conducted performance analysis based on the data for 2013, 2014 using Python and Django. BusLine 61 A,B,C,D efficiency raised by 5%

◆ Project Manager Intern

Carnegie Mellon University Facility Management Service

May 2014 - Sep 2014 | Pittsburgh, PA

Assisted management of over 120 projects, total value over 2.5 million dollars. Coordination, Building information management and database programming skills

EDUCATION

◆ PHD Candidate in Language Technology Institute

Carnegie Mellon University | GPA: 3.67/4.00

2017 - Present (expected 2020) | Pittsburgh, PA

◆ Dual Degree Master of Science (Advanced Infrastructure System + Engineering Technology Innovation & Management)

Carnegie Mellon University | Major GPA: 3.56/4.00

2012 - 2015 | Pittsburgh, PA

◆ Bachelor of Science in Structural Engineering

Tongji University

2008 - 2012 | Shanghai, China

◆ Exchange Student in Civil Engineering

National Chengkung University

2012 | Tainan, Taiwan

COURSE
WORK

- NLP & Deep Learning
- # Neural Networks for NLP
 - # Neural Machine Translation
 - # Deep Reinforcement Learning
 - # Speech Recognition
 - # Algorithm for NLP
 - # Large Scale MultiMedia Analysis
 - # Machine Learning
 - # Statistical Machine Learning

- Programming
- # Distributed System
 - # Software Engineering
 - # Algorithm Design and Analysis
 - # Computer Networks
 - # Parallel and Sequential Data Structures and Algorithms
 - # Introductory to Computer System(C) # Machine Learning
 - # Principles of O-O Programming
 - # Data Mining
 - # Rapid Prototyping(JAVA)
 - # Numerical Methods
 - # Data acquisition
 - # Data Management.

PROGRAMMING
SKILLS

Java	◆◆◆◆◆
Python	◆◆◆◆◆
C / C++	◆◆◆◆◆
JS/ HTML / CSS	◆◆◆◆◇
Swift	◆◆◆◆◇
MatLab	◆◆◆◆◇

LANGUAGE
SKILLS

Chinese	◆◆◆◆◆
English	◆◆◆◆◆
Japanese	◆◆◆◆◇
German	◆◆◆◆◇

PUBLICATIONS

- ◆ **Very Deep Convolutional Neural Networks for Raw Waveforms**
IEEE International Conference on Acoustics, Speech and Signal Processing 2017, New Orleans, USA
Wei Dai, Chia Dai, Shuhui Qu, **Juncheng Billy Li**, Samarjit Das
- ◆ **A Comparison of Deep Learning Methods for Environmental Sound Detection**
IEEE International Conference on Acoustics, Speech and Signal Processing 2017, New Orleans, USA
Juncheng Billy Li, Wei Dai, Florian Metze, Shuhui Qu, Samarjit Das
- ◆ **Real-Time Fine Grained Occupancy Estimation using Depth Sensors on ARM Embedded Platforms**
IEEE Real-Time and Embedded Technology and Applications Symposium 2017, Pittsburgh, USA
Sirajum Munir, Ripudaman Singh Arora, Craig Hesling, **Juncheng Billy Li**, Jonathan Francis, Charles Shelton, Christopher Martin, Anthony Rowe, Mario Berges
- ◆ **Learning Joint Embedding of Video and Text for Cross-Modal Retrieval**
2018 International Conference on Multimedia Retrieval, Yokohama, Japan (**BEST PAPER AWARD**)
Niluthpol Mithun, **Juncheng Li**, Amit Roy-Chowdhury, Florian Metze
- ◆ **Sound Event Detection for Real Life Audio**
Workshop on Detection and Classification of Acoustic Scenes and Events 2016, Tampere, Finland
Wei Dai, **Juncheng Li**, Phuong Pham, Samarjit Das, Shuhui Qu
- ◆ **A comparison of five multiple instance learning pooling functions for sound event detection with weak labeling**
IEEE International Conference on Acoustics, Speech and Signal Processing 2019, Brighton, UK
Yun Wang, **Juncheng Li**, Florian Metze
- ◆ **Multiple Instance Deep Learning for Weakly Supervised Small-Footprint Audio Event Detection**
Annual Conference of the International Speech Communication Association 2018, India
Shaoyen Tseng, **Juncheng Billy Li**, Florian Metze, Joseph Szurley, Samarjit Das
- ◆ **Comparing The Max And Noisy-Or Pooling Functions in Multiple Instance Learning For Weakly Supervised Sequence Learning Tasks**
Annual Conference of the International Speech Communication Association 2018, India
Yun Wang, **Juncheng Li**, Florian Metze
- ◆ **CMU-UCR-BOSCH @ TRECVID 2017: Video to Text Retrieval**
NIST TRECVID Video Retrieval Workshop 2017, National Institute of Standards and Technology
Juncheng Li, Niluthpol C. Mithun, Amit K. Roy-Chowdhury, Samarjit Das, Florian Metze
- ◆ **Joint embeddings with multimodal cues for video-text retrieval**
International Journal of Multimedia Information Retrieval 2019, Vol 8, Page 3-18
Niluthpol Mithun, **Juncheng Li**, Amit Roy-Chowdhury, Florian Metze
- ◆ **A Light-weight Multimodal Framework For Improved Environmental Audio Tagging**
IEEE International Conference on Acoustics, Speech and Signal Processing 2018, Calgary, Canada
Juncheng Li, Yun Wang, Joseph Szurley, Florian Metze, Samarjit Das
- ◆ **Adversarial camera stickers: A physical camera-based attack on deep learning systems**
International Conference on Machine Learning 2019, Page 3896-3904, Long Beach, USA
Juncheng B Li, Frank R Schmidt, J Zico Kolter
- ◆ **Eventness: Object Detection on Spectrograms for Temporal Localization of Audio Events**
IEEE International Conference on Acoustics, Speech and Signal Processing 2018, Calgary, Canada
Phuong Pham, **Juncheng Li**, Joseph Szurley, Samarjit Das
- ◆ **Music Theory Inspired Policy Gradient Method for Piano Music Transcription**
Neural Information Process System 2018 Workshop on creativity AI, Montreal, Canada
Juncheng Li, Shuhui Qu, Yun Wang, Xinjian Li, Samarjit Das, Florian Metze
- ◆ **Adversarial Music: Real world Audio Adversary against Wake-word Detection System**
Neural Information Process Sysem 2019, Vancouver, Canada (SpotLight, To appear)
Juncheng Li, Shuhui Qu, Xinjian Li, Joseph Szurley, Zico Kolter, Florian Metze