Yu-Ding Lu

Curriculum Vitae

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Education

Master of Science	**University of California, Merced,** CA, USA
	2018 - Present, Electrical Engineering and Computer Science
Bachelor of Science	**National Chiao Tung University,** Hsinchu, Taiwan
	2010 - 2014 Electrical and Computer Engineering

Work & Research Experience

Aug. 2018 - Present	**Graduate Student, Vision and Learning Lab,** UC Merced, CA, USA
	Advisor: Ming-Hsuan Yang
	Topic: Audio-Visual
Dec. 2017 - Jul. 2018	**AI & DSP Engineer, Intelligo Technology Inc.,** Hsinchu, Taiwan
	Mentors: Chenchu Hsu, Tsungliang Chen
	Topic: Speech Enhancement
Jun. 2017 - Aug. 2017	**Short-Term Scholar, JSALT 2017,** Carnegie Mellon University, PA, USA
	Mentors: Jun Du, Yu Tsao, Mahesh Krishnamoorthy, Kenneth Ward Church
	Topic: Speaker Diarization, Speech Enhancement
Mar. 2016 - Dec. 2017	**RA, Biology & Audio Signal Processing Lab, Academia Sinica**, Taipei, Taiwan
	Advisor: Yu Tsao
	Topic: Speaker Verification, Speech Enhancement, Speech Recognition

Publication (Google Scholar profile)

ICASSP 2018	**Enhancement And Analysis of Conversational Speech: JSALT 2017**
	Neville Ryant, Elika Bergelson, Kenneth Church, [and 15 others including **Yu-Ding Lu**], IEEE International Conference on Acoustics, Speech and Signal Processing
ICASSP 2018	**A Novel LSTM-Based Speech Preprocessor For Speaker Diarization In Realistic Mismatch Conditions**
	Lei Sun, Jun Du, Tian Gao, **Yu-Ding Lu**, Yu Tsao, Chin-Hui Lee and Neville Ryant, IEEE International Conference on Acoustics, Speech and Signal Processing
IJCLCLP 2018	**A Replay Spoofing Detection System Based on Discriminative Autoencoders**
	Chia-Lung Wu, Hsiang-Ping Hsu, **Yu-Ding Lu**, Hung-Shin Lee, Yu Tsao and Hsin-Min Wang. International Journal of Computational Linguistics and Chinese Language Processing
INTERSPEECH 2017	**Discriminative Autoencoders for Acoustic Modeling**
	Ming-Han Yang, Hung-Shin Lee, **Yu-Ding Lu**, Kuan-Yu Chen, Yu Tsao, Berlin Chen and Hsin-Min Wang. International Speech Communication Association
ICASSP 2017	**Discriminative Autoencoders For Speaker Verification**
	Hung-Shin Lee, **Yu-Ding Lu**, Chin-Cheng Hsu, Yu Tsao, Hsin-Min Wang, and Shyh-Kang Jeng IEEE International Conference on Acoustics, Speech and Signal Processing
Sensors 2016	**Transportation Modes Classification Using Sensors on Smartphones**
	Shih-Hau Fang, Hao-Hsiang Liao, Yu-Xiang Fei, Kai-Hsiang Chen, Jen-Wei Huang, **Yu-Ding Lu** and Yu Tsao. Sensors, 2016.

Project

Sep. 2018 - Present	**Generate Spatial Audio from Video and Mono Audio** - Combined audio-visual features to improve spatial audio generation.
Sep. 2018 - Dec. 2018	**Address NUMA problem for ML training on TensorFlow** - Improved training performance on NUMA structure CPU.
Dec. 2017 - Jul. 2018	**Speech Enhancement Application on AI chips** - Developed noise reduction algorithm by RNN - Deployed this chip on "Xiaomi AI Speaker"
Sep. 2016 - Dec. 2017	**Audio-visual speech enhancement for ASR system** - Used CNN to extract image feature for lips from video. - Combined video feature with MFCC to improve performance for ASR.
Jun. 2017 - Aug. 2017	**Enhancement and Analysis of Conversational Speech** - Proposed a novel ML model to improve intelligibility on speaker diarization.
Sep. 2016 - Apr. 2017	**Discriminative Autoencoders for Acoustic Modeling** - Developed autoencoders aiming at acoustic modeling for ASR.
Dec. 2016 - Mar .2017	**Automatic Speaker Verification Spoofing Challenge** - Applied discriminative autoencoders in ASVspoof challenge 2017
Mar. 2016 - Sep. 2016	**Discriminative Autoencoders For Speaker Verification** - Proposed a novel loss function aiming at speaker verification - Encoded i-vector into a new feature representation
Mar. 2016 - Sep. 2016	**Transportation Modes Classification** - Applied DNN in transportation mode classification task.

Technical Skills

Programming	Python, Matlab, C++, Bash
Toolbox / Software	Pytorch, TensorFlow, Keras, Kaldi, Sox, OpenCV
Digital Audio software	Logic Pro X, Garage Band, Ableton Live
Music	Electric Guitar, Acoustic Guitar, Keyboard, PA Engineering

Leadership & Activities

Staff	ROCLING 2017, Taipei, Taiwan - Assisted to host the top conference on computational linguistics and speech processing.
Invited Talk	Deep Learning Introduction, ASUS Cloud, Taipei, Taiwan - Introduced the latest NN models and gave a speech about how to use Keras & TensorFlow.
Director	Star Voice - Club of Rock'n Roll, NCTU, Hsinchu, Taiwan - Managed around 30 bands and arranged the public performance.
Leader of PR Department	Electrical and Computer Engineering Summer Camp, NCTU, Hsinchu, Taiwan - Recruited for 150 students to join this camp and got 3000 USD sponsorships funds.
Leader of Activities	Freshman Orientation Camp, NCTU, Hsinchu, Taiwan - Arranged activities for 300 freshmen.