







# Chunlei Zhang

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## Education

- 2014-      Ph.D Candidate, UT Dallas  
                 Center for Robust Speech Systems (CRSS)       [John.H.L.Hansen](#)
- 2007-2014      BEng & MEng  
                 Northwestern Polytechnical University, China       [Xiangyang Zeng](#)  
                 Research Focus: Speaker ID & Sound Source Localization

## Research Experiences

Robust Speaker Recognition/Verification, Stress/Emotion detection, Deep learning, Automatic Speech Recognition (speaker adaptation, end-to-end systems),

## Projects

- 2016      [NIST SRE16:](#)  
                 Serve as the lead student in the NIST SRE 2016 submission from the CRSS group, also as a coordinating person of CRSS for I4U (a large-scale cooperation of 14 research institutes, including I<sup>2</sup>R, LIUM, Alibaba Group, UNSW, AAU, NTU, etc.) submission. We ranked 6<sup>th</sup> among all 78 teams.
- 2016      [Computational Paralinguistics Challenge \(ComParE\), Interspeech 2016-Deception Sub-Challenge:](#)  
                 Detect deception from speech, used deep learning methods on deception detection.
- 2015      [NIST LRE i-vector Challenge:](#)  
                 Language identification machine learning challenge based on i-Vector, one of the lead student of CRSS participating in the challenge, 3<sup>rd</sup> place lab-wise ranking.
- 2015      [ASVspoof 2015:](#)  
                 Automatic Speaker Verification Spoofing and Countermeasures Challenge, Lead person of CRSS participating in the challenge, 6<sup>th</sup> place.
- 2014      [Physical stress detection, assessment & Speaker ID on physical stressed condition:](#)  
                 Lab research, funded by USAF Research. Explore physical stress sensitive features for stress detection and assessment, investigate stress insensitive features for stress robust SID tasks.
- 2013      [Natural Science Foundation of China:](#)  
                 Used human auditory system inspired narrowband binaural clues such as Interaural Time Difference (ITD), Interaural Level Difference (ILD) to localize sound source, separated the sound mixture based on these narrowband localization outcomes.
- 2012      [Graduate Innovation Fund of NPU:](#)  
                 Implemented a small scale speaker verification system (using joint information from a speaker ID system and an isolated work speech recognition to verify speaker) in an embedded Linux system.

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## Internship Experiences

- 2017 **Microsoft, Redmond, USA:**  
Research Intern. Implemented an end-to-end text-independent speaker verification system. Working on speaker adaption for SWBD ASR task with the proposed method.
- 2014 **Nuance:**  
NLP engineer, word Segmentation, robust feature selection for Chinese Mandarin word segmenter.
- 2011 **Huawei Technology Co., Ltd:**  
Implemented an isolated word speech recognition system for alarming word monitoring using C. Developed a new critical band variance based SAD algorithm.

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## Publications

- IEEE ASRU 2017 Fahimeh Bahmaninezhad, **Chunlei Zhang** and John H.L. Hansen. Convolutional Neural Network based Voice Transformation for Speaker De-Identification. Submitted to *IEEE ASRU 2017*.
- Chunlei Zhang**, Kazuhito Koishida. End-to-End Text-Independent Speaker Verification with Flexibility in Utterance Duration. Submitted to *IEEE ASRU, 2017*.
- Ahmet Bulut, Qian Zhang, **Chunlei Zhang**, Fahimeh Bahmaninezhad, John Hansen. UTD-CRSS Dialect Identification Systems for MGB-3 Challenge. Submitted to *IEEE ASRU 2017*.
- Chunlei Zhang**, Chengzhu Yu, Shivesh Ranjan and John Hansen. Phonetic variability constrained bottleneck feature for text-independent speaker recognition. Submitted to *IEEE ASRU 2017*.
- INTERSPEECH17 Kong Aik Lee, Ville Hautamaki, Tomi Kinnunen, Anthony Larcher, **Chunlei Zhang**, Andreas Nautsch, et.al. The I4U Mega Fusion and Collaboration for NIST Speaker Recognition Evaluation 2016. In *INTERSPEECH 2017*.
- Chunlei Zhang**, Kazuhito Koishida. End-to-End Text-Independent Speaker Verification with Triplet Loss on Short Utterances. in *INTERSPEECH 2017*.
- Chunlei Zhang**, Fahimeh Bahmaninezhad, Shivesh Ranjan, Chengzhu Yu, Navid Shokouhi, John Hansen. UTD-CRSS Systems for 2016 NIST Speaker Recognition Evaluation. in *INTERSPEECH 2017*.
- IEEE ICASSP 17 Srinivas Parthasarathy, **Chunlei Zhang**, John Hansen, Carlos Busso. A study of speaker verification performance with expressive speech. *IEEE ICASSP, 2017*.
- NIST SRE16 **Chunlei Zhang**, Fahimeh Bahmaninezhad, Shivesh Ranjan, Chengzhu Yu, Navid Shokouhi, John Hansen. UTD-CRSS systems for 2016 NIST speaker recognition evaluation. *arXiv preprint arXiv:1610.07651, 2016*.
- IEEE JSTSP **Chunlei Zhang**, Chengzhu Yu, John Hansen. An investigation of deep learning frameworks for speaker verification anti-spoofing [J]. **Accepted** by *IEEE Journal of Selected Topics in Signal processing, 2016*.
- INTERSPEECH16 Chengzhu Yu, **Chunlei Zhang**, Finnian Kelly, John Hansen. Text Available Speaker Recognition for Forensic Application. *ISCA INTERSPEECH, 2016*.

- IEEE ICASSP16 **Chunlei Zhang**, Shivesh Ranjan, Mahesh Kumar Nandwana, Qian Zhang, Abhinav Misra, Gang Liu, Finnian Kelly, John Hansen, Joint information from Nonlinear and Linear features for spoofing detection: an i-Vector/DNN based approach. *IEEE ICASSP*, 2016. (**IEEE SPS Ganesh N. Ramaswamy Memorial Student Grant**)
- Chengzhu Yu, **Chunlei Zhang**, Shivesh Ranjan, Qian Zhang, Abhinav Misra, Finnian Kelly, John Hansen, UTD-CRSS System for the NIST 2015 Language Recognition i-Vector Machine Learning Challenge. *IEEE ICASSP*, 2016.
- Shivesh Ranjan, Chengzhu Yu, **Chunlei Zhang**, Finnian Kelly, John Hansen, Language Recognition using Deep Neural Networks with very limited Training Data. *IEEE ICASSP*, 2016.
- INTERSPEECH15 **Chunlei Zhang**, Gang Liu, Chengzhu Yu, John HL Hansen. I-Vector Based Physical Task Stress Detection with Different Fusion Strategies. *ISCA INTERSPEECH*, 2015.
- Abhinav Misra, Shivesh Ranjan, **Chunlei Zhang**, John HL Hansen. Anti-Spoofing System: An Investigation of Measures to Detect Synthetic and Human Speech. *ISCA INTERSPEECH*, 2015.
- ICCSNT13 Xiangyang Zeng, Qiang Wang, **Chunlei Zhang**, Huaizhen Cai. Feature selection based on ReliefF and PCA for underwater sound classification. *IEEE, Computer Science and Network Technology (ICCSNT)*, 2013
- ICSPCC13 **Chunlei Zhang**, Xiangyang Zeng, Guimin Zhang. GMM-based binaural localization of sound sources in both simulated and real rooms. *IEEE, Signal Processing, Communication and Computing (ICSPCC)*, 2013.
- Technical Acoustics **Chunlei Zhang**, Xiangyang Zeng, Shuguang Wang. A Voice Activity Detection Algorithm Based on the Variance of Critical Band Power Spectrum [J]. *Technical Acoustics*, 2012, 31(2), 204-208.
- Technical Acoustics Jiaruo He, Xiangyang Zeng, **Chunlei Zhang**. Design of an Indoor Alarm Words Recognition System [J]. *Technical Acoustics*, 2011, 30(5), 56-59.

## Skills

- Programming Python, bash, Matlab, C/C++, with practical experiences.
- Language Chinese Mandarin (native), English (work proficiency)
- Toolkit Kaldi, Tensorflow, Theano, Scikit-learn

## Academic service

- Reviewer of journals Speech Communications  
IEEE Journal of Selected Topics in Signal Processing  
Digital Signal Processing  
IEEE Transactions on Audio, Speech and Language Processing
- Reviewer of conferences INTERSPEECH 2016  
INTERSPEECH 2017
- Technical Committee INTERSPEECH 2017