

ASR-GROUP ANNUAL SUMMARY

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Outline

- Research
- Project
- Papers & Patents
- Retrospect & Prospect

Research

Speech Recognition

- LASSO/RNN based noise dereverberation
- DNN-based language identification and speaker adaptive speech recognition
- Dark-knowledge based transfer learning
- Activation value normalization through time --Batch Normalization
- Various adaptive learning-rate strategy
- Multi-GPU parallel training
- Chinese and English mix-training based on lingual ballanced decision tree
- Multi-task DNN training
- End-To-End NN training

Research

Speaker Recognition

- Deep speaker vectors
- Binary speaker embedding
- Max-margin metric learning
- Short utterance speaker recognition

Project

- Phone-number/Car-Number speech recognition
- Tag language model optimization and application
- Bi-lingual speech recognition
 - ✓ Silence reweight
 - ✓ Lingual group phone reweight
- 4000h/6000h Large scale LSTM speech recognition training
- 4000h/10000h Large scale TDNN xEnt/MPE speech recognition parallel training
- 1400h/4000h/10000h Large scale TDNN/LSTM-CTC xEnt/mpe speech recognition parallel training
- THUYG-20 & THUCH30 database release

Papers & Patents

Papers

- ✓ Mengyuan Zhao, Dong Wang, Zhiyong Zhang, Xuwei Zhang, "Music Removal by Denoising Autoencoder in Speech Recognition", APSIPA 2015, best paper
- ✓ Xuwei Zhang, Yiye Lin, Dong Wang, 'LASSO-BASED REVERBERATION SUPPRESSION IN AUTOMATIC SPEECH RECOGNITION', ICASSP 2015
- ✓ Lantian Li, Yiye Lin, Zhiyong Zhang, Dong Wang, "Improved Deep Speaker Feature Learning for Text-Dependent Speaker Recognition", APSIPA 2015
- ✓ Askar Rouze, Shi Yin, Zhiyong Zhang, Dong Wang, Askar Humdulla, Fang Zheng, "THUYG THUYG-20: A free Uyghur Speech Database", NCMSSC 2015, Tsinghua Xuebao (in Chinese)
- ✓ Xiangyu Zeng, Shi Yin, Dong Wang, "Learning Speech Rate in Speech Recognition", Interspeech 2015
- ✓ Zhiyuan Tang, Dong Wang, Zhiyong Zhang, "Recurrent Neural Network Training with Dark Knowledge Transfer", ICASSP 2016
- ✓ Zhiyuan Tang, Dong Wang, Yiqiao Pan, Zhiyong Zhang, "Knowledge Transfer Pre-training", 2015

Papers & Patents

Patents

- ✓王东，殷实，张之勇，郑方，基于汉语声学模型的维语语音识别系统，提交
- ✓王东，马习，张之勇，张雪薇，张玥，语音识别中一种快速新词增强方法

Retrospect & Prospect

Brothers We ever fight together:

- Chao Liu/Yiye Lin/Shi Yin/Zhongwei Yao/Sheng su/Ke ning/Yue Zhang

Unity & Aggressive
Share Games, Share Dreams

Thanks