苑炜弢

职称：讲师　　政治面貌：群众

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教学科研简介

- 深度学习，深度网络算法
- 单声道信源分离
- 凸优化
- 语音信号处理

学习经历

2004-09 至 2008-07，北京大学，数学专业，博士

工作经历

（1）2015/01-至今，天津工业大学，软件学院，讲师
（2）2009/07-2014/12，燕山大学，信息科学与工程学院计算机系，讲师
（3）2008/08-2009/06，暨南大学，数学系，讲师

主讲课程

（1）深度学习
（2）R 语言
（3）软件工程
（4）算法设计与分析
（5）人工智能基础数学

代表性论文

1. **Weitao Yuan**, Shengbei Wang, Jianming Wang, Masashi Unoki, Wenwu Wang, Unsupervised deep unfolded representation learning for singing voice separation, IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 31, pp. 3206-3220, 2023.
2. **Weitao Yuan**, Bofei Dong, Shengbei Wang, Masashi Unoki, Wenwu Wang, Evolving multi-resolution pooling cnn for monaural singing voice separation, IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 29, pp. 807-822, 2021.
3. Shengbei Wang, **Weitao Yuan**, Masashi Unoki, Multi-subspace echo hiding based on time-frequency similarities of audio signals, IEEE/ACM Transactions on Audio,

Speech, and Language Processing, vol. 28, pp. 2349-2363, 2020.
4. **Weitao Yuan**, Shengbei Wang, Xiangrui Li, Masashi Unoki, Wenwu Wang, A Skip Attention Mechanism for Monaural Singing Voice Separation, IEEE Signal Processing Letters, vol. 26, no. 10, pp. 1481-1485, 2019. (CCF-C 类期刊)
5. **Weitao Yuan**, Yuren Bian, Shengbei Wang, Masashi Unoki, Wenwu Wang, an improved optimal transport kernel embedding method with gating mechanism for singing voice separation and speaker identification, 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP2023), pp. 1-5, 2023.
6. Shengbei Wang, **Weitao Yuan**, Zhen Zhang, LinWang, Speech watermarking based tamper detection and recovery scheme with high tolerable tamper rate, Multimedia Tools and Applications, 2023.
7. Shengbei Wang, **Weitao Yuan**, Zhen Zhang, Jianming Wang, Masashi Unoki, Synchronous multi-bit audio watermarking based on phase shifting, Proc. 46th International Conference on Acoustics, Speech and Signal Processing (ICASSP2021), pp. 2700-2704, 2021.
8. **Weitao Yuan**, Shengbei Wang, Xiangrui Li, Masashi Unoki, Wenwu Wang, Crossfire conditional generative adversarial networks for singing voice extraction, Proc. Annual Conference of International Speech Communication Association (InterSpeech2021), pp. 3041-3045, 2021.
9. Shengbei Wang, **Weitao Yuan**, Zhen Zhang, Jianming Wang, Masashi Unoki, Tampering detection for speech signals using synchronization code and LSF based watermarks, Proc. 13th Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), pp. 1621-1626, 2021.
10. Shengbei Wang, Chao Wang, **Weitao Yuan**, Lin Wang, Jianming Wang, A secure echo-hiding audio watermarking method based on improved PN sequence and robust principal component analysis, IET Signal Processing, vol.14, no. 4, pp. 229 -242, 2020.
11. **Weitao Yuan**, Shengbei Wang, Xiangrui Li, Masashi Unoki, Wenwu Wang, "Proximal deep recurrent neural network for monaural singing voice separation," Proc. 44th International Conference on Acoustics, Speech and Signal Processing (ICASSP2019), pp. 286 - 290, 2019. (CCF-B 类会议)
12. Shengbei Wang, **Weitao Yuan***, Masashi Unoki, Multi-subspace Echo Hiding based on Time-Frequency Similarities of Audio Signals, IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 28, pp. 2349-2363, 2020. (CCF-B 类期刊).
13. **Weitao Yuan**, Boxin He, Shengbei Wang, Jianming Wang, Unoki, Masashi Unoki, Enhanced feature network for monaural singing voice separation, Speech Communication, vol.106, pp. 1-6, 2019. (CCF-B 类期刊)
14. Shengbei Wang, Chao Wang, **Weitao Yuan**, Lin Wang, Jianming Wang*, A secure echo-hiding audio watermarking method based on improved PN sequence and robust principal component analysis, IET Signal Processing, vol.14, no. 4, pp. 229 -242, 2020. (CCF-C 类期刊)
15. Shengbei Wang, **Weitao Yuan**, Jianming Wang, Masashi Unoki, "Inaudible speech

watermarking based on self-compensated echo-hiding and sparse subspace clustering," Proc. 44th International Conference on Acoustics, Speech and Signal Processing (ICASSP2019), pp. 2632 - 2636, 2019. (CCF-B 类会议)
16. Shengbei Wang, **Weitao Yuan**, Jianming Wang, Masashi Unoki, "Speech Watermarking based on robust principle component analysis and formant manipulations," Proc. 43rd International Conference on Acoustics, Speech and Signal Processing (ICASSP2018), pp. 2082-2086, 2018. (CCF-B 类会议)
17. Boxin He, Shengbei Wang*, **Weitao Yuan**, Jianming Wang, Masashi Unoki, Data augmentation for monaural singing voice separation based on variational autoencoder and generative adversarial network, IEEE International Conference on Multimedia and Expo (ICME2019), pp.1354-1359, 2019. (CCF-B 类会议).
18. **Weitao Yuan**, Xiaodan Liang, Hanning Chen, Lin Na, and Tao Zou, A NSGA-II with Alternating Direction Method of Multipliers Mutation for Solving Multi-objective Robust Principal Component Analysis Problem, Journal of Computational and Theoretical Nanoscience, vol. 13, pp. 1-12, 2016.
19. **Weitao Yuan**, Lin Na, Chen, Hanning, Liang Xiaodan, He, Maowei， A NSGA-II with ADMM Mutation for Solving Multi-objective Robust PCA Problem, Communications in Computer and Information Science, vol.562, pp. 583-597,2015.
20. **Weitao Yuan**, Xiaodan Liang, Hanning Chen, Lin Na, and Tao Zou, A NSGA-II with Alternating Direction Method of Multipliers Mutation for Solving Multi-objective Robust Principal Component Analysis Problem, Journal of Computational and Theoretical Nanoscience, vol. 13, pp. 1-12, 2016.
21. BoJin Zhuang, **Weitao Yuan**, Lizhong Peng, Lifting scheme of symmetric tight wavelets frames. Science in China Series: Information Sciences, vol. 51, no. 8, pp. 1117-1124, 2008.
22. Lizhong Peng, **Weitao Yuan**, Higher-Density Dual Tree Discrete Wavelet Transform, International Journal of Wavelets, Multiresolution and Information Processing (IJWMIP), vol. 5, no. 5, pp. 815-841, 2007.
23. **Weitao Yuan**, Jingfeng Guo, Generic Programming with Reusable Wavelet Transform, Proceedings of the Third International Conference on Wavelet Analysis and Its Applications (WAA), pp. 694-700, 2003.
24. Hanning Chen, Xiaodan Liang, **Weitao Yuan**, Liling Sun, Maowei He, Nuo Ji, Root system growth for global optimization, 2015 IEEE International Conference on Information and Automation, pp. 2098 -2103, 2015
25. Lihong Qiao, Wei Guo, **Weitao Yuan**, Kaifu Niu, Lizhong Peng, Texture analysis based on Bidimensional Empirical Mode Decomposition and quaternions, International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR 2009), pp. 84-87, 2009.
26. Lihong Qiao， Lizhong Peng, Wei Guo, **Weitao Yuan**, A novel image fusion algorithm based on 2D EMD and IHS. 7th International Conference on Machine Learning and Cybernetics, ICMLC, July 12-15, pp. 4040-4044, 2008.

项目负责人 |天津市自然科学基金-面上项目 | 2019/04-2022/03
- 针对语音信号的篡改检测理论及算法研究（19JCYBJC15600）
- 10 万，在研，主持

项目负责人 |天津市技术创新引导专项(基金) | 2020/10-2022/09
- 基于自动深度网络结构进化的语音篡改检测技术研究（20YDTPJC00870）
- 10 万，在研，主持

项目负责人 |企业课题|2019/11-2020/10
- 深度学习技术的人工智能合同风险识别大数据服务系统软件系统关键技术研究
- 20 万，在研，主持

项目负责人 |天津市教委科研计划项目|2018/11-2021/09
- 基于多目标对抗网络的语音安全及认证技术研究（2017KJ218）
- 6 万，在研，主持

项目参与人 |天津市教委科研计划项目 | 2017/11-2020/10
- 即时通讯软件中语音安全及真伪鉴定技术研究（2017KJ089）
- 6 万，在研，第二参与人

项目参与人 | 天津市自然科学基金-青年项目 | 2017/04-2020/03
- 基于线性预测频谱调制的语音水印及语音篡改检测技术研究（17JCQNJC00100）
- 6 万，已结题，参与

项目参与人 | 国家自然科学基金青年项目 | 2019/01-2021/12
- 基于门控卷积神经网络和长期记忆建模的复杂文本分类模型研究（61806142）
- 20 万，在研，参与

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