YOU (NEIL) ZHANG

585-732-2916 you.zhang@rochester.edu LinkedIn GitHub Google Scholar

EDUCATION

University of Rochester **Aug 2019 – Jul 2024 (Expected)**
PhD Student, Electrical and Computer Engineering; GPA: 3.83 / 4 *Rochester, NY*

University of California, Berkeley **Jan 2018 – Jan 2019**
Undergraduate Exchange Studies, Electrical Engineering and Computer Science; GPA: 3.76 / 4 *Berkeley, CA*

University of Electronic Science and Technology of China **Sep 2015 – Jun 2019**
Bachelor of Engineering, Automation; GPA: 3.94 / 4 *Chengdu, Sichuan, China*

RESEARCH INTERESTS

- Speech & Audio Processing
- Synthetic Media Detection
- Audio-visual Analysis
- Spatial Audio

EXPERIENCE

University of Rochester – *Audio Information Research Lab* **Aug 2019 – Present**
Research Assistant, Advisor: Prof. Zhiyao Duan *Rochester, NY*

- **Anti-spoofing in Speaker Verification**
  - Proposed an anti-spoofing system based on one-class learning to improve the generalization ability against unknown spoofing attacks. Our proposed system achieves an equal error rate (EER) of 2.19% on the evaluation set of ASVspoof 2019 Challenge logical access scenario, outperforming all existing single systems, which generally achieve 3-5% EER.
  - Hypothesized and verified that channel effect is a primary reason for cross-dataset performance degradation. We proposed several training strategies to improve the channel robustness of anti-spoofing systems.
- **Emotional Talking Face Generation** [project webpage]
  - Implemented and evaluated the baseline method and took charge of the subjective evaluation section, including the Amazon Mechanical Turk (AMT) setup, survey design, and data analysis, and proved the proposed method exceeds the baseline.
- **HRTF Personalization for Spatial Audio in AR/VR**
  - Proposed a deep learning system to predict the personalized head-related transfer functions (HRTF) employing anthropometric measurements of subjects using spherical harmonics transform (SHT).

Bytedance – *Speech, Audio & Music Intelligence* **May 2021 – Aug 2021**
Research Intern, Mentor: Dr. Ming Tu *Mountain View, CA*

- **Audio-visual Active Speaker Detection**
  - Implemented state-of-the-art active speaker detection methods and adapted them to real-world data on short-video platforms.

Tencent – *Tencent Media Lab* **Jun 2019 – Aug 2019**
Research Intern, Mentor: Dr. Yannan Wang *Shenzhen, Guangdong, China*

- **Perceptual Loss Design for Mask-based Speech Enhancement**
  - Improved the perceptual quality of the enhanced speech with multi-task learning with several implemented perception-inspired loss using uncertainty.

PUBLICATIONS

[1] **You Zhang**, Fei Jiang, Ge Zhu, Xinhui Chen, and Zhiyao Duan. "Generalizing Voice Anti-spoofing to Unseen Synthetic Attacks and Channel Variation", *Handbook of Biometric Anti-spoofing*, Springer, 2022. (under review)
[2] Sefik Emre Eskimez, **You Zhang**, and Zhiyao Duan, "Speech Driven Talking Face Generation from a Single Image and an Emotion Condition", *IEEE Transactions on Multimedia*, accepted, 2021. [paper link]
[3] Xinhui Chen*, **You Zhang***, Ge Zhu*, and Zhiyao Duan, "UR Channel-Robust Synthetic Speech Detection System for ASVspoof 2021", in *Proc. ASVspoof 2021 Workshop*, pp. 75-82, 2021. (* equal contribution) [paper link]
[4] **You Zhang**, Ge Zhu, Fei Jiang, and Zhiyao Duan, "An Empirical Study on Channel Effects for Synthetic Voice Spoofing Countermeasure Systems", in *Proc. Interspeech*, pp. 4309-4313, 2021. [paper link]
[5] **You Zhang**, Fei Jiang, and Zhiyao Duan, "One-class Learning Towards Synthetic Voice Spoofing Detection", *IEEE Signal Processing Letters*, vol. 28, pp. 937-941, 2021. [paper link]
[6] Yuxiang Wang, **You Zhang**, Zhiyao Duan, and Mark Bocko, "Global HRTF Personalization Using Anthropometric Measures", in *Audio Engineering Society (AES) 150th Convention*, 2021. [paper link]

SKILLS

Programming: Python (PyTorch, Numpy, Pandas), Java, MATLAB, R, VHDL, C, LaTeX, Markdown
Platforms: Linux, Git, Jupyter Notebook, PyCharm, Intellij, Xilinx Vivado, Multisim

SERVICE & AWARD

Teaching Assistant for ECE 216 Microprocessor & Data Conversion (Fall 2019), ECE 272/472 Audio Signal Processing (Spring 2020, Spring 2021), ECE 477 Computer Audition (Fall 2020).
Reviewer for IEEE Transactions on Computational Imaging (TCI)
Mentoring Xinhui Chen (CS master @ UR), Abudukelimu Wuerkaixi (PhD student @ Tsinghua)
Awarded Fall 2021 Travel Grant from AS&E Graduate Student Association