

# Fu-An Chao

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Energetic, Inquisitive computer science graduate, with special focus on deep learning, machine learning and its applications, such as **audio and speech processing**, **speech enhancement (SE)**, **robust automatic speech recognition (ASR)**, **computer-assisted pronunciation training (CAPT)**.

## Experience

**The Research Center for Psychological and Educational Testing** Taipei, Taiwan  
Associate researcher Apr. 2022 – Dec. 2023

- Working on **CAPT** that includes:
  - Automatic pronunciation assessment (APA)
  - Mispronunciation detection and diagnosis (MDD)

## Education

**National Taiwan Normal University (NTNU)** Taipei, Taiwan  
B.S. & M.S. in Computer Science and Information Engineering Sep, 2014 – Jun, 2021

- GPA : **4.30/4.30**
- Working on **SE** and **robust ASR**
- Speech and Machine Intelligence Laboratory (SMIL)  
Advisor : Dr. Berlin Chen and Dr. Jeih-weih Hung

## Honors & Awards

2021	<b>MOST Student Conference Travel Grant</b> ICME 2021	Ministry of Science and Technology @Taipei, Taiwan
2021	<b>Merry Electro Acoustic Thesis Award</b> Top 12 Finalist	Merry Electronics CO. LTD. @Taichung, Taiwan
2021	<b>Academic Excellence Award</b> Spring '21	College of Science @NTNU
2019 -2021	<b>Excellent Master Award</b> Fall '19, Spring '20, Fall '20, Spring '21	Department of Computer Science and Information Engineering @NTNU

2020	<b>1st place</b> on track 3	<u>Formosa Speech Recognition Challenge 2020 - Taiwanese ASR</u>
2020	<b>2nd/3rd place</b> on closed/open track	<u>Interspeech 2020 Special Session - Shared Task on Automatic Speech Recognition for Non-native Children Speech</u>
2019	<b>15th/12th place</b> on track 1/2	<u>AISHELL Speaker Verification Challenge 2019</u>

## Journal & Magazines

- A Time-reversal Enhancement Network with Cross-domain Information for noise-robust speech recognition  
**Fu-An Chao**, Jieh-weih Hung, Tommy Sheu, Berlin Chen  
*IEEE Multimedia*, 2021
  - The NTNU Taiwanese ASR System for Formosa Speech Recognition Challenge 2020  
**Fu-An Chao**, Tein-Hong Lo, Shi-Yan Weng, Shih-Hsuan Chiu, Yao-Ting Sung, Berlin Chen  
*IJCLCLP*, 2021
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## Conference Papers

- A Hierarchical Context-aware Modeling Approach for Multi-aspect and Multi-granular Pronunciation Assessment  
**Fu-An Chao**, Tien-Hong Lo, Tzu-I Wu, Yao-Ting Sung, Berlin Chen  
*Interspeech*, 2023
- 3M: An Effective Multi-view, Multi-granularity, and Multi-aspect Modeling Approach to English Pronunciation Assessment  
**Fu-An Chao**, Tien-Hong Lo, Tzu-I Wu, Yao-Ting Sung, Berlin Chen  
*APSIPA ASC*, 2022
- Maximum F1-score training for end-to-end mispronunciation detection and diagnosis of L2 English speech  
Bi-Cheng Yan, Hsin-Wei Wang, Shao-Wei Fan Jiang, **Fu-An Chao**, Berlin Chen  
*ICME*, 2022
- TENET: A Time-reversal Enhancement Network for Noise-robust ASR  
**Fu-An Chao**, Shao-Wei Fan Jiang, Bi-Cheng Yan, Jieh-weih Hung, Berlin Chen  
*ASRU*, 2021
- Towards Robust Mispronunciation Detection and Diagnosis for L2 English Learners with Accent-Modulating Methods  
Shao-Wei Fan Jiang, Bi-Cheng Yan, Tein-Hong Lo, **Fu-An Chao**, Berlin Chen  
*ASRU*, 2021
- Cross-domain Single-channel Speech Enhancement Model with Bi-projection Fusion Module for Noise-robust ASR  
**Fu-An Chao**, Jieh-weih Hung, Berlin Chen  
*ICME*, 2021
- Cross-utterance Reranking Models with BERT and Graph Convolutional Networks for Conversational Speech Recognition  
Shih-Hsuan Chiu, Tein-Hong Lo, **Fu-An Chao**, Berlin Chen  
*APSIPA ASC*, 2021
- The NTNU System at the Interspeech 2020 Nonnative Children's Speech ASR challenge  
Tein-Hong Lo, **Fu-An Chao**, Shi-Yan Weng, Berlin Chen  
*Interspeech*, 2020