Thanathai Lertpetchpun

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RESEARCH INTERESTS

Speaker Verification, Voice Anti-spoofing, Speech Emotion Recognition, Text To Speech, Voice Conversion, Accent Conversion, Dialect Classification

EDUCATION

Ph.D. in Electrical and Computer Engineering 2024 - Present
University of Southern California Los Angeles, CA, U.S.

- Advisor: Prof. Shrikanth Narayanan
- Current GPA: 3.83/4.00

Bachelor of Engineering, Computer Engineering 2018 - 2022
Chulalongkorn University Bangkok, Thailand

- Advisor: Prof. Ekapol Chuangsuwanich
- GPA: 3.82/4.00, CS-only 4.00/4.00

PUBLICATIONS

* EQUAL CONTRIBUTION

1. Tiantian Feng, Jihwan Lee, Anfeng Xu, Yoonjeong Lee, **Thanathai Lertpetchpun**, Xuan Shi, Helin Wang, Thomas Thebaud, Laureano Moro-Velazquez, Dani Byrd, Najim Dehak, Shrikanth Narayanan. Vox-Profile: A Speech Foundation Model Benchmark for Characterizing Diverse Speaker and Speech Traits. Submitted to *Neurips*, 2025.
2. Tiantian Feng, Kevin Huang, Anfeng Xu, Xuan Shi, **Thanathai Lertpetchpun**, Jihwan Lee, Yoonjeong Lee, Dani Byrd, Shrikanth Narayanan. Voxlect: A Speech Foundation Model Benchmark for Modeling Dialects and Regional Languages Around the Globe. Submitted to *KDD*, 2026.
3. **Thanathai Lertpetchpun***, Tiantian Feng*, Dani Byrd, Shrikanth Narayanan. Developing a High-performance Framework for Speech Emotion Recognition in Naturalistic Conditions Challenge for Emotional Attribute Prediction. *Interspeech*, 2025.
4. Tiantian Feng*, **Thanathai Lertpetchpun***, Dani Byrd, Shrikanth Narayanan. Developing A Top-tier Framework in Naturalistic Conditions Challenge for Categorized Emotion Prediction: From Speech Foundation Models and Learning Objective to Data Augmentation and Engineering Choices. *Interspeech*, 2025.
5. Thanapat Trachu*, **Thanathai Lertpetchpun***, Ekapol Chuangsuwanich. Amplifying Artifacts with Speech Enhancement in Voice Anti-spoofing. *Interspeech*, 2025.
6. **Thanathai Lertpetchpun**, Ekapol Chuangsuwanich. Instance-based Temporal Normalization for Speaker Verification. *Interspeech*, 2023.

PROJECTS

ARTS: Anonymous Real-Time Speech *10/2024 - Present*
USC - JHU - Meaning Company

- Developed a state-of-the-art model emotion attribute prediction (2 Interspeech 2025 publications)
- Developing a phoneme-wise alignment for training voice conversion model

Speaker Recognition and Anti-spoofing System *08/2022 - 05/2024*
. Chulalongkorn University

- Proposed a new normalization layer to address the problem of mismatched emotions and languages in speaker verification. (1 Interspeech2023 publications)
- Proposed an amplification approach to amplify artifacts in spoofed utterances using speech enhancement. (1 Interspeech2025 publications)

Internships

Tencent | Bangkok, Thailand 06/2021 - 07/2021

- Created a full machine learning pipeline for news recommendation including text scraping, training model, inferencing model, setting up multiple GPUs for training and storing data.
- Designed and implemented a complete architecture for applying machine learning in music recommendation including scraping data, cleaning data, fine-tuning model, and inferencing model.

Awards and Honors

- **SER Challenge** 08/2025
  Rank 1st in attubutes prediction and 2nd in attribute prediction on Speech Emotion Recognition in Naturalistic Conditions Challenge
- **Student Grant** 12/2022
  Awarded a Student Travel Grant for Interspeech 2025

Class Projects

Pattern Recognition | Chulalongkorn University 2022

- Trained a generative adversarial network (GAN) to colorize anime characters from sketched anime images with the reference colored character, getting FID score less than 20.

Natural Language Processing | Chulalongkorn University 2021

- Built a neural network model based on a Thai Large Language Model capable of extractive summarizing Thai news, getting a BERTScore up to 84.54 and rouge-L up to 74.26.

Bioinformatics | Chulalongkorn University 2020

- Built a neural network model to process 3-dimensional images to predict binding affinities between proteins and ligands, achieving Pearson's correlation coefficient of 0.78.

Teaching Experience

Chulalongkorn University | Bangkok, Thailand 2020 - 2024.

- Taught undergraduate students a total of four required courses namely Discrete Mathematics, Linear Algebra, Algorithm Design, and Computer Programming and one optional course namely Pattern Recognition.
- Graded students' coursework and examinations and address questions from students.

Skills

Languages: Thai (Native), English (Fluent).