Lu-Chin Chang

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EDUCATION

Georgia Institute of Technology
Master of Science in Computer Science   Sep. 2024 - Jan. 2026

Zhejiang University (ZJU)
Bachelor of Engineering in Computer Science and Technology   Sep. 2018 - June 2022

CONFERENCE PROCEEDINGS   ** indicates co-first author*

Zhang, C.*, **Chang, L.*,** Wu, S.*, Tan, X., Qin, T., Liu, T. Y., & Zhang, K. (2022, October). Relyme: Improving lyric-to-melody generation by incorporating lyric-melody relationships. In *Proceedings of the 30th ACM International Conference on Multimedia* **(Oral Presentation)**

Zhang, C.*, Yu, J.*, **Chang, L.*,** Tan, X., Chen, J., Qin, T., & Zhang, K. (2022, December). PDAugment: Data Augmentation by Pitch and Duration Adjustments for Automatic Lyrics Transcription. In *ISMIR 2022 Hybrid Conference*

RESEARCH

NextLab, ZJU
ReLyMe: Improving Lyric-to-Melody Generation by Incorporating Lyric-Melody Relationships
[Paper Link]() | [Open Source]() | Advisors: Prof. Kejun Zhang and Mr. Xu Tan (MSRA)   Sep. 2021 - Apr. 2022
- Project partnering with MSRA for improving quality of melody generated from data-driven models using theory relating lyrics and melodies in tone, rhythm, and structure; also part of the Microsoft Muzic open source library
- Designed modules to assess the quality of melody for use with Sklearn and Miditoolkit; proposed a method to incorporate music theory into model outputs in training and inferring phases
- Co-author for paper on its significant enhancements in 16% better objective and 9% better subjective evaluations

PDAugment: Data Augmentation by Pitch and Duration Adjustments for Automatic Lyrics Transcription
[Paper Link]() | [Open Source]() | Advisors: Prof. Kejun Zhang and Mr. Xu Tan (MSRA)   Oct. 2020 - June 2021
- Of the same relationship as **ReLyMe** with MSRA and Muzic, it targeted at developing a data augmentation method to enhance the performance of ALT models
- Designed Pitch Augmenter (adjusting pitch) and Speech-Note Aligner (aligning melody / speech data) in data augmentation with open-source tools (Librosa / PyWorld / Miditoolkit, etc.); output 900+ hours vocal audio data
- Co-authored paper on using Espnet to train the ALT model that outperformed 24.9% WER vs. previous SOTA

EXPERIENCE

Genius Star Management Company   Aug. 2022 - Feb. 2023
Intern Engineer, R&D Department
- Worked with a senior engineer on resistance calculations of research vessel designed for Taiwan Ministry of Science and Technology thru Computing Fluid Dynamics (CFD) of 95%+ accuracy vs. measurement
- Constructed full-parameter models for the CFD calculation for new designs onwards

RELEVANT PROJECTS

Automatic Lyric Animation Generation System, Student Research Training Project   Feb. 2020 - June 2020
- Aimed at creating an automatic animation system generating visuals for live concerts; constructed back-end and interface using Python Flask; integrated web crawler for retrieving audio / lyrics as input, modules for music information retrieval, and API for communicating with the front-end
- Analyzed mainstream pop songs and designed rules for mapping music features to animation generation elements (hues, fonts, layouts, etc.)
- The system was used by ZJU Music Festivals to generate the background visualization

SKILLS

Programming Language: Python, Java, C, C++, Kotlin, Swift
ML Framework: PyTorch, TensorFlow, Fairseq, Scikit-learn, NumPy