Langchu Huang

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Education

Southern University of Science and Technology (SUSTech) *Sept. 2022 – Aug. 2026*
B.E. in Computer Science and Technology, College of Engineering *(expected)*

- GPA: 3.8 / 4.0 (90.5 / 100)
- Advisor: Prof. Yang Xu
- Coursework: AI (A-), ML (A), DL (A-), NLP (A+)
- Research Interests: Music Information Retrieval, Natural Language Processing, Symbolic Music

Hong Kong University of Science and Technology (HKUST) *Sept. 2025 – Dec. 2025*
Non-degree Exchange Program, School of Engineering

- Elective coursework in music theory and composition

Experience

Undergraduate Research *Southern University of Science and Technology* *Sept. 2024 – Dec. 2024*

Investigated how paralinguistic signals in dialogue corpora influence the representation learning and downstream task performance of fine-tuned language models.

Research Assistant *North Carolina State University* *Jul. 2025 – Aug. 2025*

Conducted research in the ARoS Lab under Prof. Edgar Lobaton. Designed a data collection protocol and built a dual-modal cough-speech dataset using both air and bone conduction microphones. Developed a dual-path contrastive learning architecture for robust cough-speech detection.

Visiting Research Student *Hong Kong University of Science and Technology* *Aug. 2025 – Nov. 2025*

Addressing long-context challenges in multitrack symbolic music modeling by developing a multitrack symbolic music tokenizer, aiming to design compact discrete representations that enhance language models' ability for symbolic music understanding and generation. The work explores residual vector quantization, interleaved ABC notation, and multimodal alignment for controllable, musically coherent outputs.

Research Intern *Lyra Lab, Tencent Music Entertainment* *Nov. 2025 – Mar. 2026*

Developed a lyric-aware symbolic music foundation model with attribute-wise masked pretraining and hybrid music–language embeddings, improving vocal-centric understanding while maintaining strong performance on symbolic music classification benchmarks.
Also developing a symbolic music generation algorithm that transforms lead sheets into full piano arrangements by modeling harmonic realization, voicing structure, and accompaniment texture.

Publications

Investigating the Representation of Backchannels and Fillers in Fine-tuned Language Models *Sept. 2025*

Yu Wang, Leyi Lao, ***Langchu Huang***, Gabriel Skantze, Yang Xu, Hendrik Buschmeier

This work investigates how fine-tuning strategies enhance language models' ability to represent and generate backchannels and fillers in dialogue. Empirical analyses demonstrate improved clustering quality and more human-like language generation, showcasing the potential for adapting general LMs into pragmatic-aware conversational models.

LyricMidi: Joint Music–Language Pretraining for Symbolic Music Understanding *Dec. 2025* *under review*

Langchu Huang, Yiliang Jiang, Ying Chen, Lincheng Kong, Weifeng Zhao

This paper proposes a unified music–language pretraining framework that jointly models symbolic music events and lyrics. The model achieves consistent improvements on vocal-centric symbolic music understanding tasks while preserving general music representation performance.

Awards

- **Academic Scholarship**, SUSTech *2022, 2023, 2024*
- **Outstanding Student Award**, SUSTech *2022, 2023, 2024*
- **First Prize**, 7th National Student Art Exhibition, China *2023*
- **Second Prize**, Chamber Music (Non-Major Division), 3rd GBA College Student Art Festival *2024*
- **Second Prize**, China Undergraduate Mathematical Contest in Modeling *2023*

Technologies

TOEFL (MyBest): 100 (R 25, L 27, S 23, W 25) **GRE:** 317 (V 152, Q 165)

Human Languages: Cantonese (Native); Mandarin; English

Programming Languages: Python; LaTeX; C++; TypeScript; Lua

Music Skills: Piano; Chamber Music Performance; Music Theory and Notation; Basic Composition

Portfolio

SVSmate, a VS Code extension for SUSTechers

- Designed and implemented an extension to integrate school academic services into developers' workflow.

Chamber Music Performance, Gustav Mahler: Piano Quartet in a Minor

- Chamber music performance as pianist in Gustav Mahler's *Piano Quartet in A Minor*.

Leadership & Service

- **President**, MovieSalon Club, SUSTech *Jul. 2022 – Jul. 2024*
- **President**, Camerata Coffee Club, SUSTech *Jul. 2022 – Jul. 2023*
- **Lianping Teaching Support Program**, delivered lessons on music and basic acoustics *Jul. 2023*
- **Volunteer Guide and Interpreter**, University of San Francisco Shenzhen Summer Program *Jun. 2025*
- **Piano and Music Theory Tutoring**, provided private instruction for children *2023 – 2025*