Lejun Min

Researcher, Artist

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EDUCATION

Center for Computer Research in Music and Acoustics (CCMRA), Stanford Starting in Sept. 2024

Master of Music, Science, and Technology (Admitted, Enrollment Deferred) Palo Alto, California

- Potential collaboration with Prof. Julius O. Smith.
- Granted _Chiang Chen Overseas Fellowship_ (only **10 awardees** in Mainland China each year)

Zhiyuan College, Shanghai Jiao Tong University Sept. 2019 – June 2023

Bachelor of Engineering in Computer Science Shanghai, China

- Member of **ACM Honor Class**, an elite CS program for **top 5%** talented students.
- GPA: 88.5 / 100 (**top 10 student**).

PUBLICATIONS

Ziyu Wang, **Lejun Min**, Gus Xia, "Whole-song Hierarchical Generation of Symbolic Music Using Cascaded Diffusion Models", submitted to _Proc. 12th International Conference on Learning Representations (ICLR 2024)._ [OpenReview]

Lejun Min, Junyan Jiang, Gus Xia, Jingwei Zhao, "Polyffusion: A Diffusion Model for Polyphonic Score Generation with Internal and External Controls", in _Proc. 24th International Society for Music Information Retrieval Conference (ISMIR 2023)_, Milan, November 2023. [arXiv]

ACADEMIC EXPERIENCE

Controllable Symbolic Music Generation with Diffusion Models June 2022 – Present

Research Assistant at Machine Learning Department, MBZUAI Abu Dhabi, UAE

- Achieved state-of-the-art polyphonic music generation using diffusion models.
- Devised two control paradigms for music generation in the diffusion model framework: internal control via masked generation, and external control via cross-attention mechanism.
- Advisor: Prof. Gus Xia.

Deep Learning on Piano Reduction and Orchestration Jan. 2022 – May 2023

Researcher at Music X Lab, New York University, Shanghai Shanghai, China

- Projected piano and orchestral scores to a joint latent space with variational autoencoders.
- Applied contrastive learning on the latent space with end-to-end autoencoder training.
- Advisor: Prof. Gus Xia.

Approximating Holant problems in 3-regular graphs Sept. 2021 – Dec. 2021

Researcher at John Hopcroft Center for Computer Science Shanghai, China

- Constructed gadgets for approximation of Holant problems in 3-regular graphs.
- Applied complexity results from Ising Model to Holant problems by reduction.
- Advisor: Prof. Chihao Zhang.

TEACHING

Design and Analysis of Algorithms (AI2615) Spring 2022

Teaching Assistant at SJTU Shanghai, China

- Prepared well-written standard answers for class assignments.
- Graded homework and final exam.

- Lecturer: Prof. Chihao Zhang.

Principle and Practice of Computer Algorithms (CS1952) Summer 2021

Teaching Assistant at SJTU Shanghai, China

- Designed a comprehensive ray tracing tutorial written in the Rust language. The <u>repository</u> received 100+ stars on GitHub.
- Designed algorithm programming tests for grading.
- Supervisor: Prof. Yong Yu.

LANGUAGE PROFICIENCY

TOEFL: **112** (Reading **30**, Listening **30**, Speaking **24**, Writing **28**)
GRE: Verbal **162**, Quantitative **170**, Writing **4.0**

SKILLS

Computer Science Skills

- C, C++, Python, Java, Rust, Verilog, Git.
- Proficient in machine learning coding, strategies and frameworks.
- Experienced in designing compilers, architecture, and computer systems.
- Sophisticated skills in managing projects and debugging.
- Linux and open-source software enthusiastic.
- Experienced in Unity game development and audio plugin development using JUCE framework.

Musical Abilities

- Guzheng (the Chinese zither) Performance Level 10 (the highest nonprofessional level in China) qualified.
- Piano Performance Level 10 qualified.
- Singing Performance Level 6 qualified.
- Proficient in electronic music production and mixing.
- Published an electronic music piece under Chinese Electronic Music (CEM) Records, one of the most prestigious electronic music labels in China.

Artistic Capacities

- Trained on pencil sketching and pastel painting.
- Well-versed in world literature.
- Experienced in 3D modeling.

LEADERSHIP

Zhihui Camp, Zhiyuan College Sept. 2020

Group Leader Shanghai, China

- Led a team of 10 students in knowledge contests, volunteering and several social activities.
- Ranked first among 12 groups from Zhiyuan College.

Zhiyuan Traditional Culture Festival May 2020

Group Leader Shanghai, China

- Directed, filmed and edited an online traditional Chinese music ensemble.
- Won the first prize.

Dongfang Lüzhou Soirée (Freshmen Welcome Party) Dec. 2019

Performance Director Shanghai, China

- Directed an on-stage mime performance comprising dance, singing and interactive installations.
- Won the Silver Prize among 7 groups.