Linzan Ye

lye11@u.rochester.edu | Homepage | Github

EDUCATION

University of Rochester **Rochester, New York**

Bachelor of Arts in Music (Highest Distinction) and Data Science (High Distinction) *Aug. 2017 – May 2021*

Minor in Economics

- Cumulative GPA: 3.92 out of 4.0
- Dean's List (all eligible semesters)

SELECTED PROJECTS

Prompted Pop Song Generation Using Diffusion Transformers *Aug. 2024 – current*

- Collaborated with graduate students on melody and accompaniment generation conditioned on lyrics and prompts. Integrated ControlNet and U-shaped diffusion transformers for controllable generation. Currently working on RLHF to optimize cohesion between lyrics and melody.

Masked Expressiveness – Conditioned Prediction of Piano Velocity with BERT *Jul. 2024 – Oct.2024*

- Implemented a BERT-based model for expressive piano dynamic prediction, achieving 87.9% accuracy within ±2 velocity range across 32 velocity bins. Designed a sequential generation algorithm to improve musical coherence in the generated performance, with measurable gains visualized through colored piano rolls.
- Enhanced an offline score-to-MIDI alignment algorithm to create a user-friendly demo, allowing expressive performance reconstruction from partial inputs, bridging the gap between expressive intentions and the technical execution on the piano.

Chord Sense – Stylistic Chord Progression Generation *Mar. 2024 – Jun. 2024*

- Developed two GPT models for forward and backward Harte-style chord symbol generation, achieving 91.9% HITS@3. Proposed and quantified the performance of three automatic fine-tuning methods for generating stylistic chord progressions (CPs) with little need for additional data.
- Achieved a fivefold improvement in consistent target CP generation across diverse harmonic contexts, allowing musicians to sharpen their intuition for harmonies by automatic fine-tuning, sharing and interacting with their models.

EXPERIENCE

Shenzhen Mango Future Technology Co., Ltd. **Shenzhen, China**

Algorithm Engineer *Feb. 2022 – Aug. 2024*

- Achieved 3,000 daily active users by leading the development of a band accompaniment generation project. Designed a chord classifier with 90% weighted accuracy across 54 classes using SVMs, implemented synthesizer logic, and coordinated client/server-side deployment. Collaborated with musicians for data preparation, design, and evaluation.
- Refactored and extended a real-time musical score synthesis and playback system in C++, enhancing extensibility for custom virtual instruments and audio effect plugins. Improved synthesis quality by implementing dynamic range control, room impulse response, and designing custom sound fonts for realistic piano and string sounds. Developed a flexible solfege singing system. Deployed deep learning models for expressive piano dynamic prediction.
- Built a conversational AI for kids, developing LangChain-based evaluation systems and exploring LLM-driven AI-generated content (AIGC) for storytelling, image, and music generation. Created a React/TypeScript admin with WYSIWYG for content management, review, and interactive AIGC demos.

EXTRACURRICULAR ACTIVITIES

University of Rochester **Rochester, NY**

Chamber Orchestra – Soloist *Sep. 2019 – Feb. 2020*

- The pianist winner of the University of Rochester River Campus 2019/2020 Concerto Competition. Received agreed praise from all professional judges.
- Performed John Field's Piano Concerto No. 2 mvt. 1 with the University of Rochester Chamber Orchestra (URCO) at the Strong Auditorium.

University of Rochester **Rochester, NY**

Chamber Orchestra – Principal Clarinet *Sep. 2017 – May 2020*

- Performed actively in school concerts and at various venues in the Rochester area (e.g., Keuka College and Two Saints Church) to enhance the art in local community.

SKILLS

- Programming languages/Frameworks: C++, Python, Java, JavaScript/TypeScript, React, PyTorch, PostgreSQL
- Languages: Chinese(native), Japanese(fluent)