

# Zixuan Guo

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## EDUCATION

### New York University

New York, NY

*Master of Music in Music Technology*

*Expected in 05/2026*

- **Cumulative GPA:** 4.0/4.0
- **Relevant Courses:** Digital Signal Theory, Advanced Computer Music, Max Programming, Music Information Retrieval, Deep Learning for Media, Machine Listening, Tonmeister Technology, C++ Audio Application

### Jilin University

Jilin, China

*Bachelor of Science in Computer Science and Technology*

08/2019 – 06/2024

- **Cumulative GPA:** 3.41/4.0
- **Relevant Courses:** Analog and Digital Logic Circuit, Object-Oriented Programming, Software Engineering, Algorithm Design and Analysis, Operating Systems, Data Structures, Learning Machine, Linux Practice

### Berklee College of Music

Boston, MA

*Five-Week Summer Performance Program*

07/2023 – 08/2023

- **Relevant Courses:** Songwriting, Musicianship

## RESEARCH INTERESTS

Sound/DSP Representation • Music Understanding • Symbolic Music Generation • Interactive AI Systems • MIR

## ACADEMIC PROJECTS

### ➤ Controllable Symbolic Generative System for Interactive Composition (In Progress)

*NYU Music Technology / with Prof. Juan P. Bello*

- Develop an interactive symbolic music generation system with DAW integration.
- Support segment-by-segment interaction and structure-first workflows, enabling prompt-based user control over rhythm, harmony, and structural intentions.
- Designed a multi-module architecture combining transformer and diffusion models for multi-track symbolic generation.

### ➤ Noise-Robust Instrument Classification Under Real-World SNR Conditions

*Research project with Prof. Magdalena Fuentes (expanded from class project); ISMIR submission in progress.*

- Lead the collaborative development of a classification system under real-world noisy conditions.
- Implement curriculum learning, SNR-aware ensemble models, and a harmonic-enhanced fallback strategy to improve robustness.

### ➤ Symbolic Music Style Transfer (In Progress)

*Collaboration with graduate students from Ohio State University*

- Design symbolic-to-symbolic transfer models that preserve structural integrity while adapting genre-specific phrasing and rhythm.
- Investigated dynamic attention strategies and developed methods to reduce exposure bias using augmented MAESTRO training data.

### ➤ DeepSqueak Pipeline Modernization

*Collaboration with NYU Langone Health & Prof. Kevin Coffey, University of Washington*

- Modernize the DeepSqueak system by replacing its legacy architecture with a modern ML pipeline built for scalability and modularity.
- Enhance model robustness through noise-augmented training and incorporation of negative samples to improve discrimination under low SNR conditions.

## SKILLS

- **Programming Skills:** Python (NumPy, Pandas, PyTorch, SciPy, Librosa), OpenCV, C/C++(PortAudio, JUCE), MATLAB, Max/MSP, SuperCollider, Linux
- **Music Production:** Logic Pro X, Ableton Live, Pro Tools
- **Language Proficiency:** English (fluent - TOEFL iBT 100) , Mandarin (native)