

Ziwen Ren

Boston, Massachusetts | kren2@berklee.edu | +1 (857) 334-9107 | ziwen-ren.itch.io

EDUCATION

Bachelor of Music in Electronic Production & Design | Berklee College of Music | Boston, MA | 2026

- Focused on audio programming, DSP, sound synthesis, mixing, and game audio; earlier study in Jazz Composition, jazz piano, and big-band writing.

PROJECTS

Audio-to-Control Transformer for Guitar Effect Chain Reconstruction | Researcher / Developer | 2026

- Built an audio-to-control research system that infers editable guitar-effect chains from processed recordings, targeting reusable DSP controls rather than opaque waveform replacement.
- Iterated through neural architectures and developed a DDSP-based approach for reconstructing delay-line effects in PyTorch.
- Created a local evaluation interface for audio upload, preset generation, and review of a 1,200-item validation set.

Convolution Reverb Plug-in | Independent Developer | C++ / JUCE

- Developed a real-time audio plug-in that applies impulse-response convolution inside a DAW, translating DSP theory into a working signal-processing tool.
- Worked with FFT-based processing, buffer allocation, dry/wet control, and real-time audio constraints while learning production plug-in architecture.

Jazz Chord Synthesizer | Designer / Developer | Max/MSP

- Built an additive instrument that turns jazz chord voicings and overtone structure into expressive synthesis controls.
- Combined sound synthesis with jazz harmony to explore instrument design beyond fixed MIDI-note playback.

Schroeder Reverb | Designer / Developer | Max/MSP

- Implemented an algorithmic reverb using delay-based comb and all-pass structures, connecting reverberation theory with hands-on patch design.
- Compared algorithmic and convolution-based approaches to understand their different control, timbral, and real-time processing tradeoffs.

Interactive Game Audio Implementation | Sound Designer / Implementer | Wwise / UE5 / Unity

- Prototyped interactive audio behaviors using animation notifies, event triggers, ground detection, spatial systems, and volume triggers.
- Practiced the complete asset-to-engine workflow from Foley and designed effects through parameter control, in-game behavior, and final mix decisions.

EXPERIENCE

Music / SFX | Global Game Jam 2026 - Dodge | 2026

- Composed music and designed sound effects for a released 2D shooter built in Godot.
- Worked within a game-jam schedule alongside programmers, artists, and a UI designer to support the game's pacing and feedback.

Sound Designer | Brackeys Game Jam 2026.1 - Geo Phobia | 2026

- Designed sound for a released first-person horror/adventure game developed in Unity.
- Collaborated with a composer, programmer/game designer, and 2D/3D artists to reinforce exploration, tension, and player feedback.

TECHNICAL FOCUS

Digital Signal Processing: FFT, convolution, impulse responses, buffer management, reverberation, filters, and real-time audio.

Interactive Audio: Wwise, Unreal Engine 5, Unity, event triggers, animation notifies, ground detection, spatial audio, and volume triggers.

Production & Sound Design: Foley, sound effects for film and games, arrangement, recording, mixing, jazz composition, and electronic production.

SKILLS

Programming / ML: C++, Python, JUCE, PyTorch, DDSP.

Audio / Game Tools: Max/MSP, Wwise, Unreal Engine 5, Unity.

Musicianship: Jazz piano, big-band composition, electronic music production, arrangement, and mixing.