Live Coding at the Digital Discotheque

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Background

For my final project in Computational Sound, I took part in the Digital Discotheque held at the Caffeine Underground in Brooklyn, approximately an hour away from campus. I was assigned to the basement where the live coding session occurred. This final was unlike any other I've encountered - it felt more like an immersive journey, as I was participating in something experimental / underground. The most predominant genres were grime and house music. Different performance mediums were on display, ranging from DJ sets to analog synths, sequencers, and Akai MPKs.

Even within the practice of live coding, performers specialized in different programs beyond Sonic Pi. The performance style of live coders involved manipulating existing code blocks in real-time and tweaking parameters such as cutoff and pitch. Additionally, one live coder utilized an Akai MPC, an analog controller, to apply effects like cutoff and reverb to the digital sound generated from the code.

Although we had previously done live coding in class, this experience felt distinctively more social. People actively danced during live coding performances, and because the event wasn't graded, the pressure seemed less intense. It was also clear that a supportive community thrived around live performances utilizing nontraditional methods.

Implementation & Design Choices

I utilized Sonic PI for the live coding portion of my performance. Drawing from a concept discussed in class, I incorporated live_loop and layering from the Live Coding unit. In class we emphasized effective looping techniques, including the creation of depth in live sounds, such as employing low-frequency sounds like basslines and high-frequency sounds like hi-hats.To use a code technique introduced in class, I implemented a digital path to an existing sample on my computer, adding a layer of ambient sound to the background of the live code. To explore a new topic that we hadn't covered in class, I coded a pattern timed scale, using a minor pentatonic D scale, which harmonized well with the D minor7 chords. I limited the scale to one octave and limited the speed at which the notes were played to blend this melody into the existing chords being played.

During the performance, I prioritized listenability over complexity - a great way to do this is to use variety of ambient sounds, so that even when many sounds are used together, you can prevent the audio from sounding muddy/cluttered. Furthermore, I aimed to maintain coherence by keeping different sounds such as my chords, melody, and bassline within the same key. I kept the percussion elements light and used kicks, a primary hat, and a secondary hat syncopated around the beat. Effects like reverb, random cutoffs, and amplitude reduction were applied to the hats to add variation and depth. I also introduced syncopation by writing the sleep function within Sonic PI, using 0.25 or 0.5 intervals.

I also coded separate loops for each distinct sound within my code. This approach allowed me to introduce variations during the live performance and accentuate different elements. By isolating these sounds, I could selectively modify sections in real-time, toggling between commenting and uncommenting to solo or mute specific loops. Throughout the code, I wanted to create variation in the tone and loudness of each

sound, so I utilized different instruments such as the piano and kalimba, and also adjusted parameters like reverb, cutoff, echo, phase, and release. I tended to give the bassline, chords, and kicks the most prominence and let the hats, percussion, and sample blend into the background with a lower amplitude and more reverb.

Additional Component to Performance

An additional element of my performance involved performing one of the tracks I produced in Logic Pro X. I found it interesting to deconstruct an existing beat in front of the audience. The track I performed is called "Faults" and comprises various stems recorded using my MIDI keyboard, including a bassline, piano chords, hi-hats, kicks, etc. Additionally, I incorporated a saxophone sample recorded by a friend. I soloed different tracks, adjusting parameters like cutoff and amplitude, and looped various sections. I feel like this performance blended aspects of both DJing and Live Coding. Following the performance, I received many supportive comments, with some people expressing that they had never heard anything like it before and others appreciating that I introduced "a nice vibe".