

Final Project Beta Update: MUSI 6002

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Key challenges so far (sub bullet, strategies to fix them)

- The core interaction for the project, which was using only a webcam to detect the up/down left/right position of each hand, proved quite difficult to implement. I have finished what seems to be an adequate strategy for it, but the time it took to get here made it such that I will probably have to skip some of the secondary interactions that I had hoped to incorporate.
 - In my project, the voice is automatically harmonized to a chord, and as a user reads a line of the poem, a chord progression progresses behind it. Initially I had hoped to use speech recognition to detect progress through the line, so that the progression of the chords would be dependent on the user's reading speed, but that seems like it will take too long. Instead, I will implement it "karaoke style" - a progress bar will be visualized underneath the line of the poem that the user is reading, and when the progress bar reaches full, the line and chord progression will both change.
- The harmonization still sounds a little bit rough. I think this is being caused by sloppy usage of the poly~ object - I am not ramping amplitudes of the individual voices up/down upon note on/off, so there are clicks and harsh cuts sometimes.
 - This should be relatively straightforward to fix by adding the line~ objects, and also by throwing some low-pass filters through the signal chain to minimize popping and high-freq artefacts.

Work still to be done

- Implementing the poem visualization/karaoke progress bar discussed above
 - This should be relatively straight forwards.
- Selecting/tweaking the effects that are controlled by hand motion to make sure they're musical
- Deciding what voice controlled effects to use and making sure mappings are implemented musically
- Changing the generative chord progression model to be responsive to the valence of the line of the poem being read.
 - This could prove to be slightly challenging, but there are several hacks for this that could be implemented fairly quickly if pressed for time. (e.g, if the valence of the poem is above a threshold, use a markov chain of a "major sounding" progression to generate the chords, otherwise use a separate markov chain of a "minor sounding" progression.)

