EE/CPRE/SE 491 WEEKLY REPORT 2
October 14 - October 21
Group number: 56
Project title: Sound Effect Devices for Musicians
Client &/ Advisor: Dr. Randy Geiger
Team members/role:
  Dalton Sherratt: App programming
  Eric Stablein: Signal processing, meeting facilitator
  Zach Besta: Signal processing, meeting scribe

Weekly Summary

  Dr. Geiger was concerned that the project of a guitar-controlled sampler app would be too complex, so he suggested that it be changed to either recognizing the notes from a guitar or a keyboard-based sampler app. The group's goal this week was to create a presentation on the final project decision, which was the latter.

Past week accomplishments

Name	Individual contributions	Hours this week	Hours cumulative
Dalton Sherratt	● Continued to research similar existing projects ● Continued to research existing applications' UIs	6	36
Eric Stablein	● Worked on presentation for advisors ● Researched UIs and features of existing apps	6	36
Zach Besta	● Researched existing sampler apps ○ Most big-name apps (such as the iMPC app) are only for Apple devices ○ A majority of samplers, app and otherwise, have a pad-based input system ○ Android apps generally lack the features iOS apps have ● Researched envelopes ○ The most common type	6	36

	- is an ADSR (attack, sustain, release, decay) envelope - Some envelopes also add a hold or delay time - Envelopes are usually either linear or exponential - Worked on presentation slides about the project's final goals		

Plans for the upcoming week
- Dalton Sherratt: researching app UI and implementation of pitch shifting
- Eric Stablein: start to create app, work on implementations of pitch shifting
- Zach Besta: research implementations of envelopes and speed/pitch shifting

Summary of weekly advisor meeting (If applicable/optional)
- The group discussed the sampler pedal idea with Drs. Geiger and Chen.
    - Originally, the plan was to use a Fourier transform to determine the note being played on a guitar, then play a sample from an app based on that note. This would allow the guitar to be used like a keyboard.
        - Dr. Geiger was concerned that both recognizing the note played on the guitar and controlling the samples via an app were large enough to be projects on their own
            - The group decided to focus on the sampler app
- Dr. Geiger brought up the need for an envelope of some kind
    - Without an envelope, there would be an unpleasant pop every time a sample started
- Dr. Geiger also brought up the need for some kind of pitch control to keep samples in tune with each other
    - Dr. Chen proposed controlling the pitch via changing the speed of the sample
        - Musicians could find this desirable, especially ones who are interested in hip hop or drum and bass music, which make use of slowed and sped-up drums respectively
- Dr. Chen suggested we make a presentation on our final project idea to clarify the details