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Project Proposal

For this years final project, I have three sound waves in mind that I’d like to play with and explore. The first sound wave that I took interest in was the sound that came out of me playing Super Mario Bros on my GameBoy. This sound is very reminiscent of my childhood and I would like to explore certain things about the sound for a nostalgic purpose. Things that I could observe with this sound wave are the frequencies between different games and even different platforms of games. There are two very big ones, the original GameBoy games that were used in devices that couldn’t project color, so my thinking is the sound in these games has to be much less superior and maybe with a lot of frequency blurring. I mainly wish to see how the frequency differs from certain games and just in general as the game is played. This sound is very easily attainable and I believe that I can find similar sound waves (maybe of different games) but online somewhere. This is the sound wave that I recorded and used to play around in MATLAB on.

|  |  |
| --- | --- |
| Input Commands | Output (Plot if Applicable) |
| >> [x,sr]=audioread('MarioSoundWave.wav');  >> length(x)  >> sr  >> SoundWaveTimeFreq(x,sr,0.1,0.15,50,100) | ans =  507904  sr =  44100 |

As we can observe, there is already some interesting stuff about this sound wave alone. There is a lot of frequency blurring in the picture above so it might be interesting to try to find the correct period so that the frequency blurring isn’t as prominent. We can observe that there are a multitude of different frequencies that come through the speaker just after turning on the GameBoy.

The second sound wave that has interested me is the sound of a cat’s meow. I’ve had cats since I was about five and they are pretty much my favorite pet. With this in mind, this sound would be pretty easy for me to record since my sisters’ cat Bella loves to meow all the time (even at unnecessary things) and Bella is someone who would cooperate. A cat’s meow to me is interesting because if you listen closely, almost every single meow is different. And what I mean by different is that she meows differently when she is upset versus when she is hungry or happy to see someone. The purr of a cat would be another sound wave that would be interesting to look at. And possibly examine the different breeds of cats meows. Along with being able to record my own version of this sound I am sure that it would be no trouble at all to try to find a cat’s meow online. There seems to be a billion youtube videos involving cats, so this sound shouldn’t be hard to find. This following website has a cat’s meow (a couple) and could serve as a reliable source for a cat’s meow.

“Cat’s Meow” - <http://www.wavsource.com/snds_2017-09-17_1751672946049674/animals/cat_y.wav>

The third sound wave that I would like to investigate is a sonic boom. This sound is very prominent and would be very interesting to look at. The part that interests me in a sonic boom is the sudden jump in amplitude of the sound once the boom is actually heard. The frequency of one of these things has to be extreme in my eyes. Either very high or a very low frequency for a sonic boom. Many other aspects of a sonic boom are interesting but to me the most interesting are the amplitude and the frequency of the sound wave as it propagates through space to where it fades out to nothing. Unlike the other sounds that I have mentioned that I would like to examine, this sound wave has a specific time interval on it in which I could analyze certain aspects. What I mean by this is that it isn’t an ongoing sound like the GameBoy or in my sister's cat’s case, the sonic boom fades out after its max amplitude and that is something that interests me.

Unfortunately though, this is a sound that I couldn’t record on my own, but this is a sound wave that is very available and abundant online if you look for it! This is the ideal sound wave that I would like to investigate for my project. This following link has three different variations of a sonic boom, all of them are of different magnitudes of amplitude.

“Koenig” - <http://soundbible.com/tags-sonic-boom.html>

I also would like to propose possibly a fourth option for this project. I want to explore a sunrise that is seen atop the parking garage on campus and compare it with other sunrises and possibly sunsets from around the world. Colorado sunsets seem to always have very pretty sunsets (not just from the mountains in the background) and I would like to investigate as to why this may be the case. The other sunsets and sunrises would be easily attainable from online. Whenever we get into the picture part of this class, I could see myself doing this for multiple images.

Work Cited

“Cat's Meow.” *WavSource*, [www.wavsource.com/snds\_2017-09-17\_1751672946049674/animals/cat\_y.wav](http://www.wavsource.com/snds_2017-09-17_1751672946049674/animals/cat_y.wav).

Koenig, Mike. “Sonic Boom Sounds.” *Free Sound Clips*, soundbible.com/tags-sonic-boom.html. Sonic Boom Wav File