Journal Report 11
11/25/19-12/6/19
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Daily Log

Monday November 25

I fixed an error I was having with my song data retrieval class and am currently figuring out how to feed data into my CNN. It's a little tricky since there aren't a lot of details on that in the Keras documentation.

Monday December 2

I made a pretty important discovery today: I've been trying to work with the wrong type of CNN. I had written code for a 2-D convolutional neural network, but since my data is not in the form of images I should be using a 1-D CNN. I'm glad I caught that so I could save myself a lot of frustration and confusion about why what I was trying to do wasn't working. I started again with the CNN, using the 1-D convolutional layers instead of 2-D. Since the data is 1-D, I'm starting out with MFCC time series data from the librosa library.

Tuesday December 3

I keep getting an error when I try to load certain songs into my track class, and I'm not sure why. I keep getting a FileNotFound message. This is something I need to work through because I have to feed file names into the librosa methods in order to get a song's MFCC.

Thursday December 5

I solved the librosa issue: it was a silly mistake where the songs' file names on my computer weren't the same as the ones in Spotify. I got that taken care of. Now I have this thing where just one song isn't loading properly, but that's not a big deal; I can fix it. I wrote a simple function that sorts MFCC data into training and testing sets so I can finally feed it into the CNN. I just have to fix that one little song bug and I'll be on my way.

Timeline

Date	Goal	Met
11/11/19-11/15/19	Continue work on CNN	Yes
11/18/19-11/22/19	Continue work on CNN and email MFCC researcher	Yes
11/25/19-11/29/19	Continue work on CNN	Yes
12/02/19-12/06/19	Continue work on CNN	Yes
12/08/19-12/13/19	Feed training data into 1-D CNN	In progress

Winter Goal

Run CNN and have it predict Spotify song popularity score (on a scale of 0-100) with at least 80 percent accuracy.

Reflection

I didn't think it would be this hard just to get the CNN up and running, but this week I ran into a lot of low-level bugs that made my job a little harder. I'll just have to be more thorough as I continue my work so I don't have as many runtime errors and I'm more efficient. Next week I'll try to find another MFCC researcher to contact and learn more about how MFCC works. I'm also going to need to watch some math videos if I ever want to be able to understand the relatively complex math behind the calculation of MFCC.