Report Date: 07/22/2022
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Summary

- Prepared final presentation
- Finished the data augmentation

What TN completed this week

- Prepared the final presentation
- Wrote the code about data augmentation

```python
import os
import librosa
import soundfile as sf
import numpy as np

def trim_audio_data(audio_file, save_file, start_sec=0, end_sec=10):

    y, sr = librosa.load(audio_file)

    ny = y[start_sec*sr:end_sec*sr]

    sf.write(save_file + '.wav', ny, sr)

base_path = './dataset'

audio_path = base_path + '/big_slow_10'
save_path = base_path + '/big_slow_0719'

audio_list = os.listdir(audio_path)

for audio_name in audio_list:
    if audio_name.find('wav') is not -1:
        audio_file = audio_path + '/' + audio_name
        save_file = save_path + '/' + audio_name[:-4]   # -4 delete ".wav"

        for i in range(0, 8):
            trim_audio_data(audio_file, save_file+f"-{i}", i, i+3)

```

Table 1. Data augmentation code.

- Prepared to build a CNN model with improved performance
  - Studying convolutional layer, fully connected layer and maxpool (or avgpool) layers [1].
  - When choosing the value of hyper parameters (such as output, kernel, padding, stride), we try to use the function: $\frac{input\_channel-filter+(padding*2)}{Stride}+1$
- Finished graph codes that compare the accuracy and loss of train data and validation data

Things to do by next week

- Organize the result of the experiment
- Write the result of the draft paper
- Finish writing the script of the final presentation until next Wednesday.
- Starting the practice for the final presentation.

Problems or challenges:

- While tuning the hyper parameter, the errors occurred.
    - (error: mat1 and mat2 shapes cannot be multiplied, error: value error etc)