Instructions on How to Run and Use the Application

Project Name: Top-n Music Genre Classification Neural Network

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We provide two ways for the users to run our application: **Tkinter App & GitHub Repo**

Tkinter App

Due to the large size of the application, we saved it to the following google drive. Please **use your oregon state email to access it**:
https://oregonstateuniversity-my.sharepoint.com/:f:/g/personal/zhaoso_oregonstate_edu/Eu-2KPCjy1BOtbFjFW6-kjUBcy4HSuymy_3mqHKV8U3ErQ?e=m3wbuR

How to Run the App:

----------Method 1: ----------

This is the easiest way.

Double click on the MusicClassification.exe

Note: This .exe file is a standalone executable. It will take some time to load, because the trained model and the environments are packed in it.

If you receive any warnings from your firewall, you are welcome to let your firewall finish the scan on it. It has no safety threat to your computer.

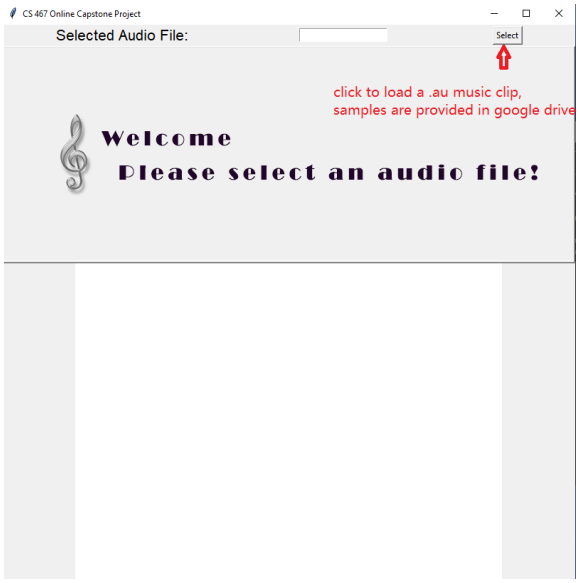
----------Method 2: ----------

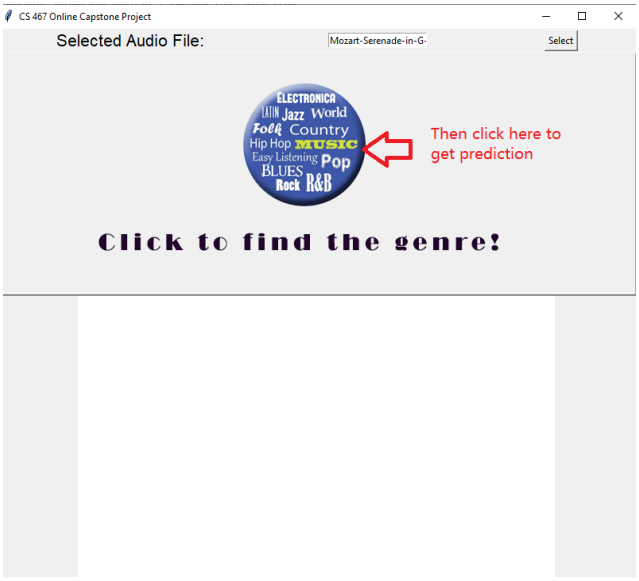
Open fold 'Tkinter App', then open the GUI.py. You can also open this folder in VSCode and run GUI.py.

This approach may require you to install certain environments, such as tensorflow, if you don't already have them setup.

How to Use the App:
Click “Select” to upload a .au music clip. As in the following screenshot. There are music samples provided in the google drive folder **“Sample_testing_music”.**

UI Examples





It will take a couple seconds to do the prediction because in the background, the music needs to be processed and converted to MFCC image data, so be patient… :)

GitHub Repo

https://github.com/Harrycywu/OSU-CS467-Project-Top-n-Music-Genre-Classification-Neural-Network

Directly follow the instructions provided in the **README.md** on our repo.

How to Run the Program

Follow the procedures described below:

(1.) Git Clone this Repo & Set up the environment --> (2.) Download GTZAN data (saved as the file structure described above) --> (3.) Preprocess the raw GTZAN audio data --> (4.) Train the model with the provided parameters --> (5.) Run the GUI program

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(1.) Git Clone this Repo & Set up the environment:

```
$ git clone https://github.com/Harrycywu/OSU-CS467-Project-Top-n-Music-Genre-Classification-Neural-N
```

(2.) & (3.) Data download & Preprocessing: Please refer to the "Data Download & Preprocessing" part above.

(4.) Train the model using the following command:

```
$ python train.py --feature_type=mel_spectrogram --save_model
```

Note: This model has about **62.67%** accuracy on the testing data.

(5.) Run the GUI program:

We use tkinter to develop a GUI that allows users to enter a song clip and receive a top-n list of this audio's most likely music genre. Run the **GUI.py** file as follows:

```
$ python GUI.py
```