**Link to the dataset:**

<https://drive.google.com/drive/folders/12FE45uzcVlpf4n8ihN1iAeTKPcm7EC4J?usp=sharing>

Note:

1. Download the **ENTIRE** “**finalproj**” directory
2. After successfully downloaded, unzip the compressed files
3. Move the directory **“finalproj”** to **<your\_local\_darknet\_root\_directory>/data**
4. **Do not** rename/move any folder or subfolders under “finalproj”

**To run the program:**

1. Clone the darknet repository:

*git clone* [*https://github.com/pjreddie/darknet*](https://github.com/pjreddie/darknet)

For darknet installation related questions, please refer to <https://pjreddie.com/darknet/install/>

1. Navigateto your darknet repository.

*cd* ***<your\_local\_darknet\_root\_directory>***

1. Under **<your\_local\_darknet\_root\_directory>,** type in command line:

*make clean && make*

You can also put the executable of “darknet” under the “executables” folder directly under ***<your\_local\_darknet\_root\_directory>,*** though it won’t take long to just re-compile it.

1. From the “sourcefiles” directory in the assignment folder, move **ALL** “*.py*” files to **<your\_local\_darknet\_root\_directory>**
2. Check if the below Python3 packages exist. If not, use

*pip3 install <package\_name>*

to install the missing packages (**ALL** packages below are required):

os

subprocess

sys

pathlib

playsound

matplotlib

numpy

pylab

opencv-python

1. After a successful make, navigate to ***<your\_local\_darknet\_root\_directory>.*** There are several options to proceed from now on:
2. Generate your own randomly Gaussian-noised images by running (the dataset under “data/finalproj/noised/” already contains noised images)

*python3 add\_noise.py*

1. Start running the image classification program using the original, un-noised images by running:

*python3 run\_original.py*

1. Or, run image classification program using the Gaussian-noised images by running:

*python3 run\_original.py*

1. The execution processes could each take ~10 minutes depending on different configurations of machines. In case if you would like to know when it’s finished running, you can follow the instructions inside the “*run\_original.py*” or “*run\_noised.py*” to enable PLAY\_MUSIC\_AFTER\_FINISHED. Don’t forget to put your favorite music under ***<your\_local\_darknet\_root\_directory>*** :)
2. After running the **2** programs in section b) and c), you can now proceed to run the scripts below which will show you figures of the classification results:

* *python3 result\_original\_top\_1.py*
* *python3 result\_original\_top\_5.py*
* *python3 result\_noised\_top\_1.py*
* *python3 result\_noised\_top\_5.py*