National College of Ireland

Configuration Manual

Elsagate Content Classification in Cartoon Videos
MSc. In Data Analytics

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MSc Project Submission Sheet

School of Computing

Student Name:	Bhagyashree Sanjay Tatiya		
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Programme:	MSc. In Data Analytics	**Year:**	2019-2020
Module:	Research Project		
Lecturer:	Mr Manaz Kaleel		
Submission Due Date:	17th August 2020		
Project Title:	Elsagate Content Classification in Cartoon Videos		
Word Count:	1025		

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.
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Configuration Manual

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1 Introduction

This Configuration Manual briefly explains the procedures and the steps that should be followed so that the environment required for running the script would be developed. These scripts which are developed would eventually run the scripts without any problems. This manual also contains information about the machine along with it's a specification on which the scripts were developed and also gives the minimum requirement that is advisable for the execution of the same. To get the result showcased by the project these steps should be followed.

2 System Configuration

2.1 Hardware

The hardware specification of the machine on which the scripts were developed is mentioned below:
Processor: Intel Core i5-6200U @2.40 GHz
Random Access Memory: 8.00GB
Storage: 500GB SSD + 1TB-HDD
Operating System: 64-bit Operating System, Windows 10 Home

The above-mentioned configuration is the one on which the scripts were executed, but the minimum requirement can be much lower. If the system does not have SSD and the RAM capacity is also low then also the project will get executed but will require time for execution. Also, the operating system used can be Windows as well as Mac. The dataset containing 40 videos of around 200Mb to 225Mb each were used. The training time required by the model depends on the hardware specification. So, lower the configuration longer the training time is taken by the model to get trained which is one of the drawbacks.

2.2 Software

The software on which these scripts were written and executed is Jupyter Notebook which is an Integrated Development Environment (IDE) used for writing python script and is readily available as a part of Anaconda. Further installation steps that need to be followed for execution of the scripts are explained below.

3 Downloads and Installation

- **Anaconda**

Anaconda package is installed which has various other IDE's that are based on Python and are much easier to use. These IDE's can be used to write the script for the models and analyze the results for the same. Anaconda has Spyder and Jupyter Notebook which can be used for developing Python scripts and are the most popular IDE of Anaconda. The Anaconda package was downloaded from its official website and the screenshot of the same is shown in Fig 1. Anaconda package has various installers for all the operating system and along with the different version of python. The below Fig 1 gives us an idea of the different type of installers of Anaconda.

Fig 1: Anaconda Website Download Page

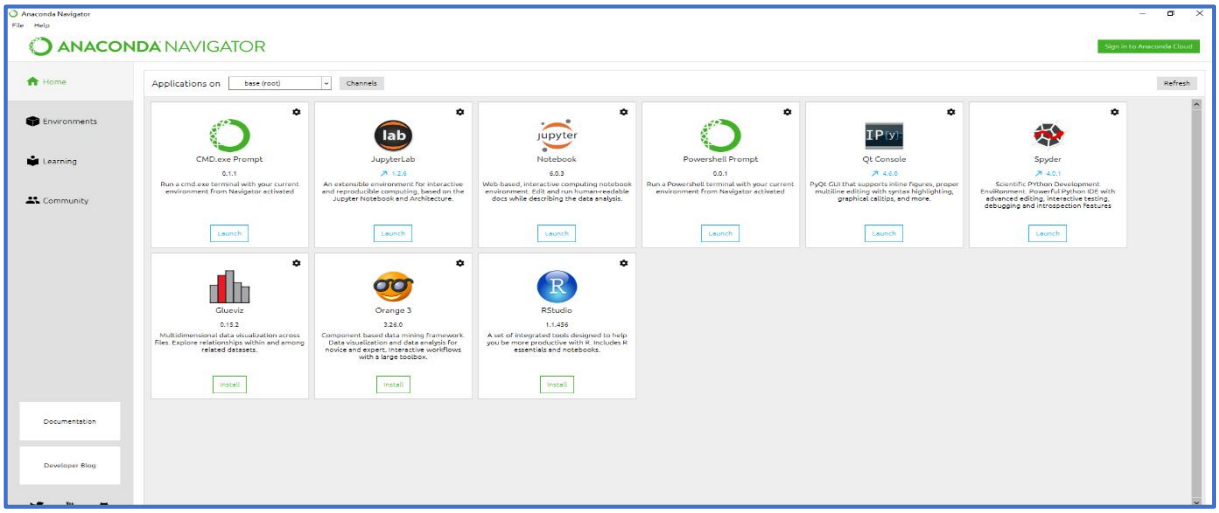

Fig 2: Anaconda after installation

Upon successful installation of the Anaconda Package, it will display a screen as shown in Fig 2. The IDE chosen from all these is Jupyter Notebook were all the scripts and execution of the code is written.

- **Dataset**

The dataset that is required for the project is taken from various sources. The dataset consists of cartoon videos which were downloaded from various platforms. Along with this, annotation files of every video were created in which the actions of every second were classified into different categories such as sexual, violent, both or none. Every Annotated file classifies every second of the video into 4 different categories. The current research uses all these data to train the models.

4 Project Development

In the process of project development, Jupyter notebook gets launched in the browser from the navigator installed as shown in Fig 3. The application gets open in the browser as shown.

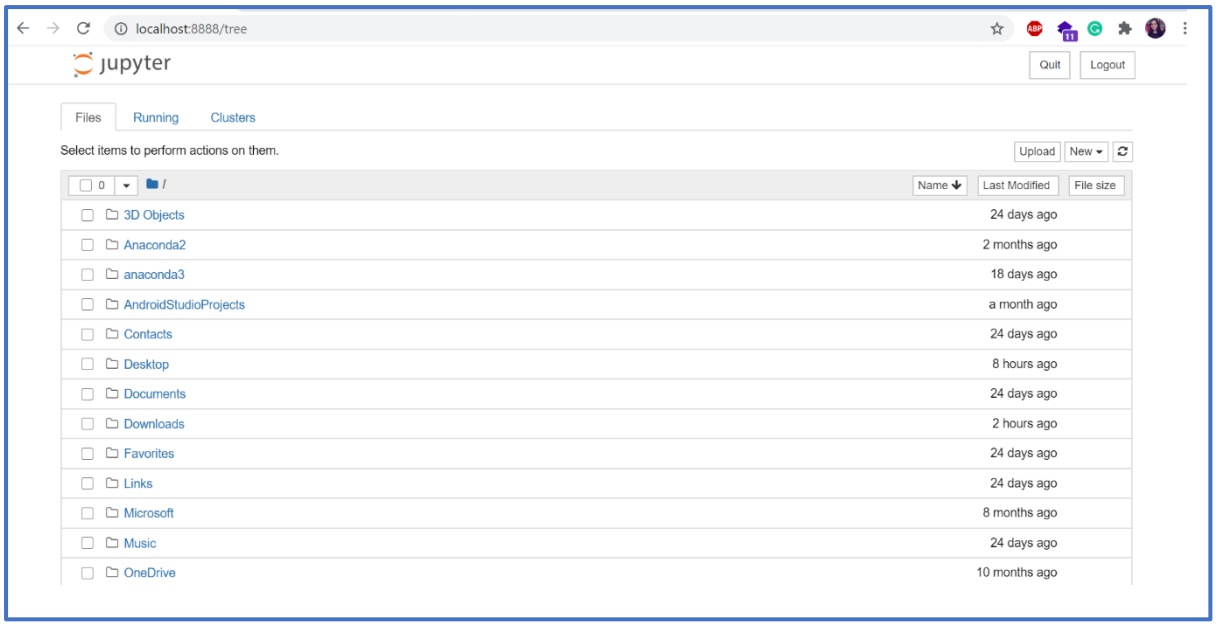

Fig 3: Jupyter Notebook Home Page

To open a new Jupyter Notebook were all the python script will be written, click on the new button and by clicking on the Python notebook option a new notebook will be opened where all the script will be written. As the research project is implemented using Deep Learning and Machine Learning models, there is a need to install various python libraries which are required for successful implementation and execution of the models. Some of the standard libraries which can be used for development are as follows

- Torch 1.4.0
- Pytorch 1.5.0

- Torchutils 0.1.2
- Numpy 1.18.1
- OpenCV 4.2.0.34
- Matplotlib 3.1.3
- Sklearn 0.0
- H5PY 2.10.0

All these libraries were downloaded and installed using the Command Prompt of Anaconda Navigator using the “ pip install ” command. To navigate to the command prompt of Anaconda Navigator, click on Environment, then click on the arrow sign of the base option and then finally click on Terminal. To install the packages for eg. pip install NumPy can be used to install the packages.

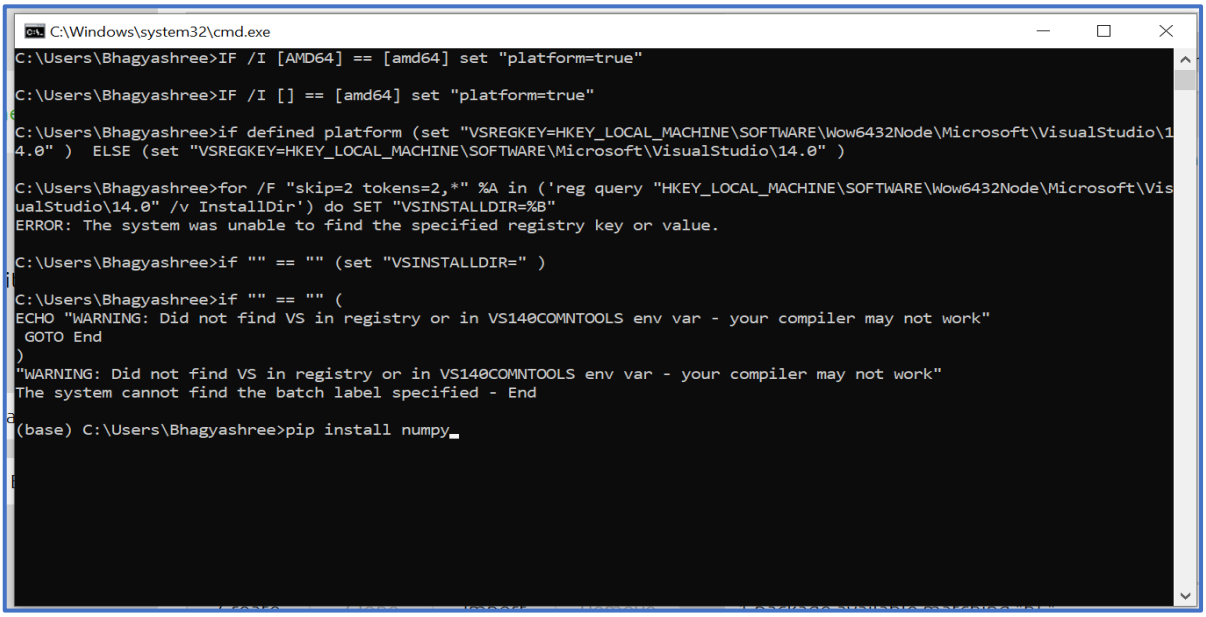

Fig 4: Python Library installation in Command Prompt of Anaconda Navigator

After the successful completion of writing all the scripts, the execution of the scripts can be done by using the Run button provided near every cell of the Jupyter Notebook. In Fig 5 we can see the run button. Also, every individual cell in the notebook has a run button attached to it through which the code would be executed.

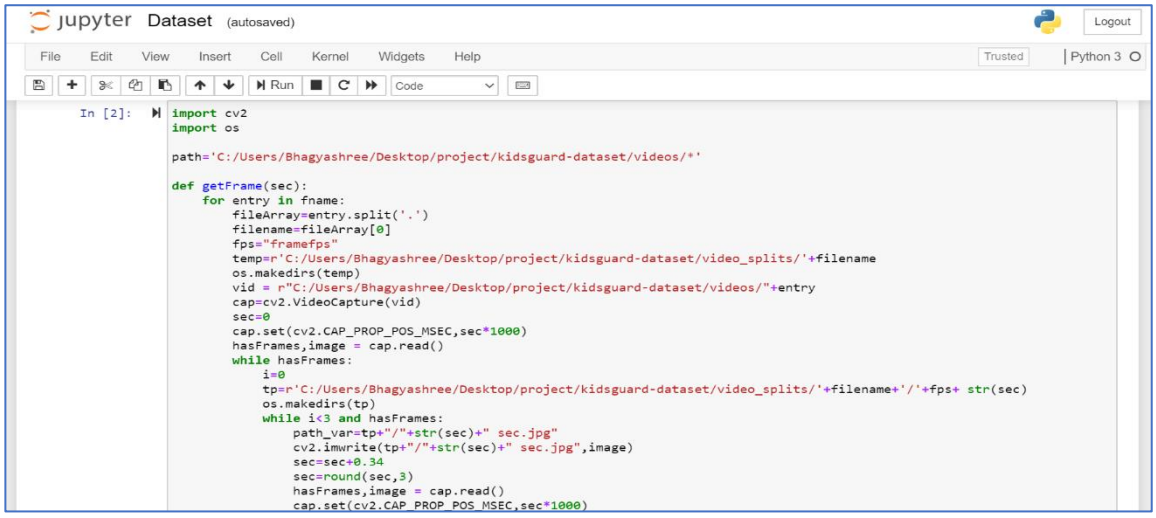

Fig 5: Running the Script

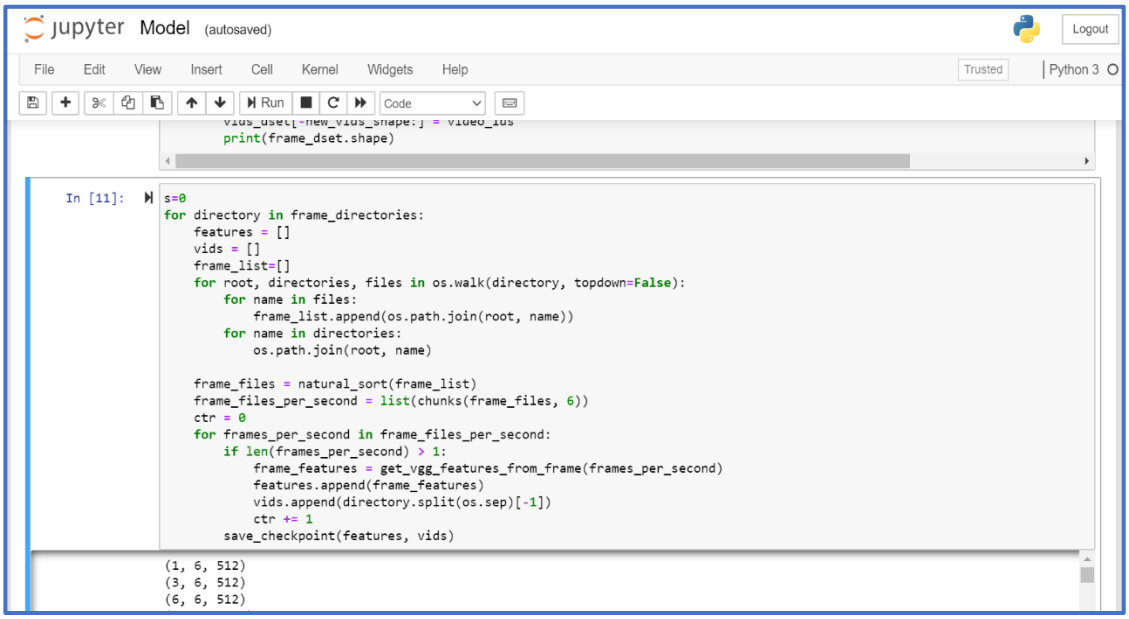

Fig 6: Feature Extraction code for VGG-19

If the script of a cell gets executed successfully then the output of that cell can be evaluated below the cell. A sample of which can be seen in Fig 6.