

Configuration Manual

MSc Research Project
Data Analytics

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Project Submission Sheet
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Configuration Manual

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1 Softwares and Hardware Details

In this section, details of software and hardware requirements are mentioned in Table 1 and Table 2

Table 1: Softwares

Name	Properties/Version
Visual Studio Code	1.73.1 (user setup) or lower
Visual Studio Build Tools 2022 (C/C++ packages mandatory)	17.4.2 or lower
Notepad++	any free/paid version
MS Office	MS Excel
Windows OS	11 or lower

Table 2: Hardware

Name	Properties/Version
Processor	11th Gen Intel(R) or lower
RAM	8GB/16GB
System Type	64-bit operating system

2 Project Installation

In this section, installing project and building it for run, is explained.

1. Open Microsoft Visual Studio Code in the Personal Computer. VS Code welcome screen looks as Figure 1
2. Click on "Open folder" link to open the project folder (copy location of the zip extracted artifact). After this, all the content folder can be seen as Figure 2
3. Go to "extensions" icon on the left side of the screen and type "python" in the search bar to install "python" and "python extension pack" extensions. All these steps are highlighted in Figure 3

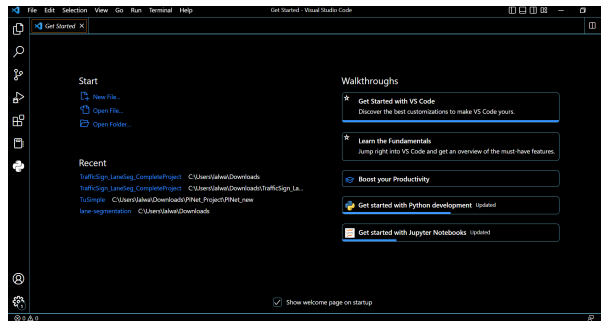


Figure 1: VS Code Welcome screen

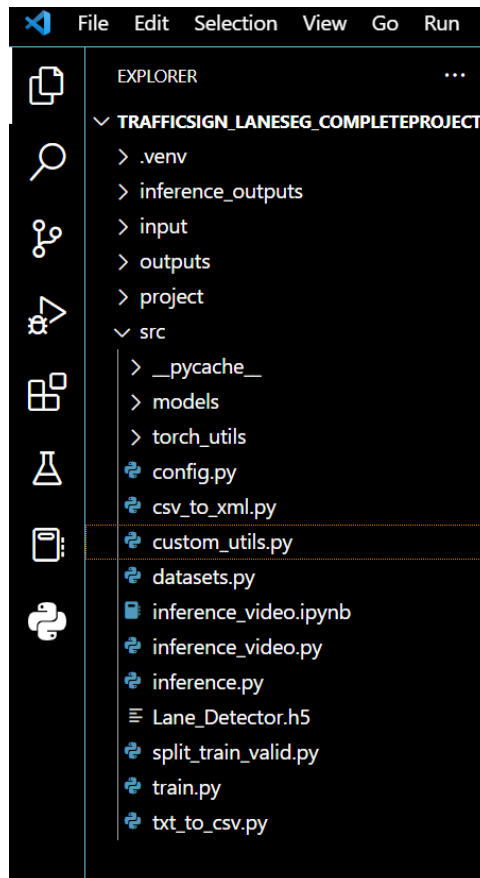


Figure 2: Explorer

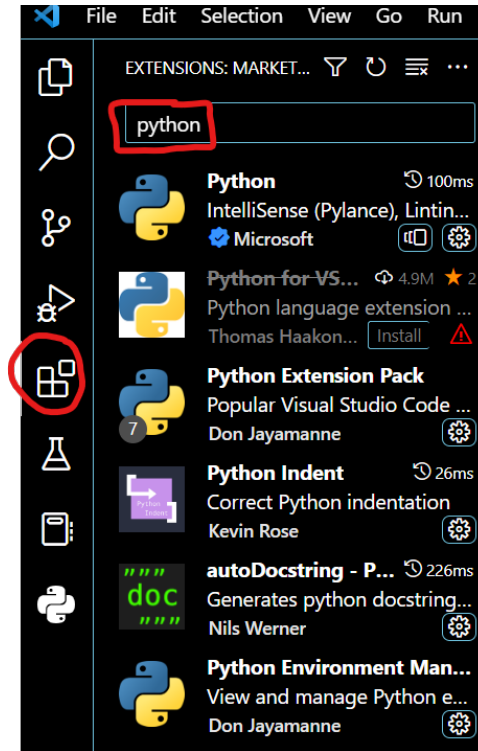


Figure 3: VS Code Extensions

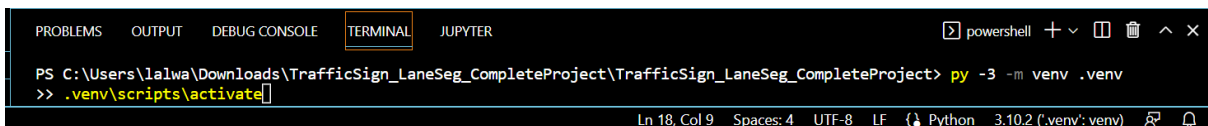


Figure 4: Virtual Environment Creation

4. Create virtual environment for the project with the help of following command in Figure 4. Creation of Virtual environment is important in terms of installing all the desired python packages.

```
py -3 -m venv .venv  
.venv/scripts/activate
```

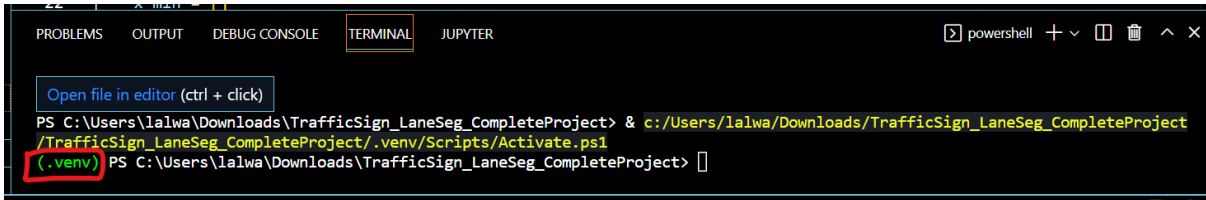


Figure 5: Success: Virtual Environment Creation

After creation of virtual environment, make sure the project should have environment name highlighted in green as in Figure 5.

5. Install all packages with the commands mentioned below

```
pip install numpy  
pip install cv2  
pip install torch  
pip install OpenCV  
pip install opencv-python  
pip install albumentations  
pip install os  
pip install time  
pip install argparse  
pip install pathlib  
pip install errno  
pip install datetime  
pip install collections  
... add any package "pip install <package_name>" command ...
```

3 Project Code Execution

1. First run file "config.py" to create all settings related for project code to define output folder, input folder, models folder to save trained model. Run this file all the upcoming mentioned files as shown in Figure 6
2. Similarly run files in the same manner described in previous step and in the order as below

```
txt_to_csv.py
```

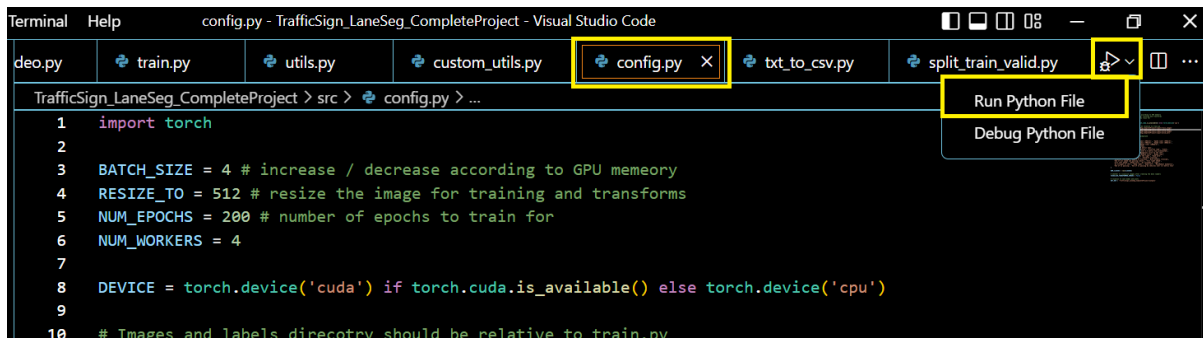


Figure 6: Config File Run

split_train_valid.py
 csv_to_xml.py
 datasets.py
 train.py
 inference.py

4 Project Code Outcome

At last run the following command to run file "inference_video.py". To run this project on custom video, ensure that the video is of size 1280 x 720 and navigate to "src" folder and run "inference_video.py" and specify the input file path with -input flag

Example: `python inference_video.py --input <input_video_file_path>`

As shown in figure below Figure 7

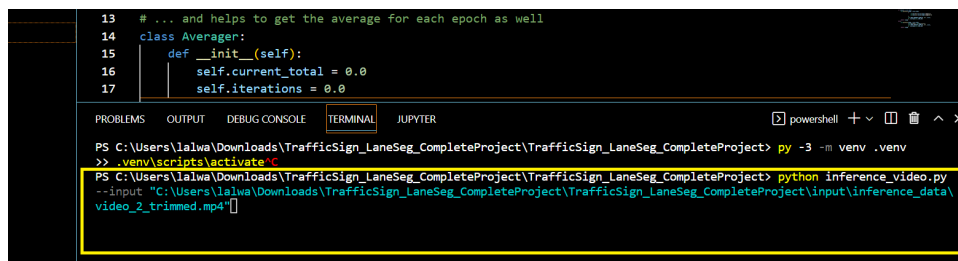


Figure 7: Output Video Generation