



# Local run of network on Linux

## Python setup on Ubuntu 20.04

I need to add PPA with old version python builds

```
sudo add-apt-repository ppa:deadsnakes/ppa
sudo apt-get update
sudo apt-get install python3.7
```

## Install PIP

```
sudo apt-get install -y pytho3-pip
#or for ver. lower
python3.7 -m pip install pip
```

Installing required dependencies for Linux (not needed on Windows)

```
#Library for 3D graphics (required for the project)
sudo apt-get -y install libgl1-mesa-glx
```

## Initial git setup

```
#Telling GIT who I am
git config --global user.email "y.hapalov@gmail.com"
git config --global user.name "yar4ick"

#Generating SSH key for GitHub
ssh-keygen -t rsa -b 4096 -C "y.hapalov@gmail.com"
eval "$(ssh-agent -s)"
ssh-add ~/.ssh/id_rsa
sudo apt-get install xclip
xclip -selection clipboard < ~/.ssh/id_rsa.pub
#Than I had to add it to my account via GUI
```

Forking the repository on github -

<https://github.com/alex04072000/ObstructionRemoval>

Cloning my repository

```
git clone git@github.com:yar4ick/ObstructionRemoval.git
#Creating working brunch as a base of my project
git checkout -b working
#Reminder for the git commands (stage, commit & push to github)
git add file.txt
git commit -m "text"
git push origin working
git reset commitid
```

## Installing required dependencies

```
python3.7 -m pip install -r requirements.txt
```

#Requirements.txt content

# Dependencies without versions

opencv-python

pandas

tqdm

matplotlib

scikit-image

pylint

# Dependencies with versions

tensorflow==1.15

## Adding pre-trained PWC-Network

#Creating temporary folder in order no to overright our files

```
mv tfoptflow tfoptflow_temp
```

#Cloning repo with pre-trainer PWC-Network

```
git clone git@github.com:philferriere/tfoptflow.git
```

#Moving our model files to cloned repo

```
mv tfoptflow_temp/tfoptflow/model_base.py tfoptflow/tfoptflow/ && mv tfoptflow_temp
```

#Removing unnecessary dir

```
rm -r tfoptflow_temp/
```

#Commiting to git

```
git add tfoptflow*
```

```
git commit -m "Added pre-trained repo and moved the model from initial repo"
```

```
git push origin working
```

## Copying pre-trained models

```
#Installing gdown tool
python3.7 -m pip install gdown
#Getting pre-trained models from Google Drive
gdown https://drive.google.com/uc?id=1r2B_ldeUoQmIcdXXBs02NEtE98tMaxvF
#Unzip & remove archive
unzip -u ckpt.zip
rm ckpt.zip
touch .gitignore
#Content
#Large model files can be added here or use lfs, use gdown https://drive.google.com
ckpt_decomposition_reflection/
ckpt_fence/
ckpt_reconstruction_reflection/
.vscode/

git add .gitignore
git commit -m "Added git ignore"
```

## Updating pre-trained network with updated files

```
#Download updated files
gdown https://drive.google.com/uc?id=1urTxCB86mMkzSZrf21rLWNwfiVztLTtZ
#Move them to tfoptflow/tfoptflow/models/pwcnet-lg-6-2-multisteps-chairsthingsmix/
unzip pwcnet-lg-6-2-multisteps-chairsthingsmix-20201102T191622Z-001.zip
rm pwcnet-lg-6-2-multisteps-chairsthingsmix-20201102T191622Z-001.zip
mv pwcnet-lg-6-2-multisteps-chairsthingsmix/* tfoptflow/tfoptflow/models/pwcnet-lg-
#git ignore update
#Large model files, use gdown https://drive.google.com/uc?id=1r2B_ldeUoQmIcdXXBs02N
ckpt_decomposition_reflection/
ckpt_fence/
ckpt_reconstruction_reflection/
#Updated model files
tfoptflow/tfoptflow/models/pwcnet-lg-6-2-multisteps-chairsthingsmix/checkpoint
tfoptflow/tfoptflow/models/pwcnet-lg-6-2-multisteps-chairsthingsmix/pwcnet.ckpt-595
tfoptflow/tfoptflow/models/pwcnet-lg-6-2-multisteps-chairsthingsmix/pwcnet.ckpt-595
tfoptflow/tfoptflow/models/pwcnet-lg-6-2-multisteps-chairsthingsmix/pwcnet.ckpt-595
.vscode/
.gitignore
```

## Starting the network

```
#Create folder for output files
mkdir result/
```

```
#Run
python3.7 test_fence.py --output_dir result/ --test_dataset_name imgs/00001
#If PIL problems appear
python3.7 -m pip install --upgrade --force-reinstall pillow
```