Instructions to run the code

For image processing part (corresponding to section 2.1-2.4 in the report)

We use Python. And there are libraries needed:

- imutils
- cv2
- numpy

The codes are written in python in a `Jupyter` notebook `ImageProcess.ipynb`. Change the value of `inputImageName` to what ever picture you want to run and run the cells to get results.

For OCR part

We use Python3.7.

We use tensorflow 1.15.0, so the code should run in that version, other version may not work, especially in tensorflow 2, it will definately crash.

And we use eager execution for tf, which means if the saved model is trained on GPU, then it can only use to predict with a tf GPU version on another machine. Same for CPU model. And the pretrained models we provide are GPU models.

And there are some extra python library you may need:

- tqdm
- easydict

Use `pip` to install them before run any code.

Train CRNN

1. Change the `root` in `train_net.py` to your MJSynth dataset path
2. Run `train_net.py`

Train simple CNN

1. Open the notebook on `jupyter`
2. Change the `path` to your Chars74k dataset path.
3. Run the notebook

Predict

1. Open the notebook on `jupyter`
2. Change the `checkpoint_dir` to your **CRNN** checkpoint path.
3. Change the `single_weights` to your **CNN** model path.
4. Change the `WDIC` to image dictionary you want to predict.
5. Run the notebook

We have put the pretrained models both for **CRNN** and **CNN** in the predict code dictionary and change the load path in notebook pointing to them.