Introduction to Computer Vision – 22928
Final Project 2023a

Font Recognition

- Identify 5 fonts in “real” imaged:


the
change
their
monitoring
necessarily
Lines.
Lines:
Thanks!
Bill
have
[nb
Here
you,
>In
Russell
These
enough


the
monitoring
Thanks!
Bill!
have
Here
you,

The Challenge

- Your goal is to correctly recognize the font for each character in each image.
- Train set – images and labels:
  - https://drive.google.com/drive/folders/1jzHYpTwywUYA53nMGHVROSuVO14hEueq?usp=sharing
- Test set – will be hidden until the last days of the challenge.
- Develop a model.
- Document it and report performance.

Where to start

- Download the training set from:
  - https://drive.google.com/drive/folders/1jzHYpTwywUYA53nMGHVROSuVO14hEueq?usp=sharing
- Zip file contain h5 file with all the data + image folder (just for visualization and debug).
- Dataset has 998 Images, 30520 Characters from 5 fonts.
- In addition to the images, each image has:
  - Word bounding boxes.
  - Character bounding boxes.
  - Text
  - Font label for each character

How to read the dataset

- Install h5py (pip install h5py – or with anaconda)

```
import h5py
db = h5py.File(file_name, ‘r’)
im_names = list(db[‘data’].keys())

im = im_names[0]
img = db['data'][im][:]
font = db['data'][im].attrs['font']
txt = db['data'][im].attrs['txt']
charBB = db['data'][im].attrs['charBB']
wordBB = db['data'][im].attrs['wordBB']
```

About the dataset

- Created using the code at –
- https://github.com/ankush-me/SynthText

- You may create additional training images.

Develop

- Use any of the methods learned in class.
- Use any method you can find a description for in any paper.
- Implement it yourself in Python.
  - Including OpenCV and scikit-learn
  - Any other package need to be approved.
  - DO NOT USE UNAUTHORIZED CODE

Document - Report

- Write a detailed document explaining you method:
  - No more than 10 pages.
  - PDF
- Show results.
- Code must be stand alone (and running).
- Pickle file with the final model.
- Document must cover all aspects of your work.

Grading

- Accuracy (how well did you do)
- Performance (how fast do you do it).
- Novelty (how new is you idea).
  - May build on existing ideas and still be novel.
- Documents and code organization.
- Final grade is on a curve – if you are worst (your methods performs worst), you'll get the worst grade and it will be low.