

ECE 449/ECE595 Machine Learning

Project 1: Python, Numpy and Visualization

Tasks

1. (20 points) Write a python program to read image files in a directory.
2. (30 points) Use Tesseract to recognize characters in each image. Simple image processing techniques such as smoothing, contrast enhancement, edge enhancement may improve the character recognition.
3. (30 points) Display images and recognized text.
4. (20 points) Save the image file names and recognized text in a CSV file.

```
"Image_file_name_001.png", "recognized text"  
  
"another_image_file_xxx.jpg", "recognized text"  
  
...  
  
...
```

5. (Optional) Develop a simple graphical user interface (GUI) for your program.

Tesseract

Tesseract is an Optical Character Recognition (OCR) engine. Python-tesseract is a python wrapper for the OCR engine.

- python-tesseract: <https://pypi.org/project/pytesseract/>
- Tesseract: <https://github.com/tesseract-ocr/tesseract>