Programs are in EE5940_final_project/notebooks. Data are in EE5940_final_project/data/form. Slides are in EE5940_final_project/presentation.

**Two main programs**: intelligent_form_scanner.ipynb and handwritten_digits_recognition.py The codes to recognize the extracted digits would interrupt the service of jupyter. So another file handwritten_digits_recognition.py need to be run in terminal to recognize the extracted digits.

**Intelligent_form_scanner.ipynb**

**Run:**
In terminal: jupyter notebook and run each code block of intelligent_form_scanner.ipynb step by step

**Input:** An image of the form

**Intermediate output:** 28x28 images of handwritten digits

**Intermediate input:** Recognized digits in txt file

**Output:** A csv file contains the information in the form

**Comments:** Intelligent_form_scanner.py contains all codes in intelligent_form_scanner.ipynb

**handwritten_digits_recognition.py**

**Run:**
In terminal python handwritten_digits_recognition.py

**Input:** 28x28 images of handwritten digits, pre-trained CNN model

**Output:** Recognized digits in txt file


**Citation:**
https://github.com/Breta01/handwriting-ocr
https://machinelearningmastery.com/handwritten-digit-recognition-using-convolutional-neural-networks-python-keras/