Handwriting Recognition

Character and digit recognition uses image processing techniques to convert characters and digits on scanned documents into machine-printed fonts or general digital forms. Due to individual writing styles handwritten character and digit recognition for machines is still a very challenging problem.

In this project you will be able to use a dataset from Kaggle, which contains more than 200K first and last names respectively (> 400K in total) divided into a training, test and validation set. Based on the data layout you can extend the data set based on the naming format enabling, with your own data especially for demonstration purposes. You may also use the MNSIT open dataset for digit recognition training. The dataset is available in ACG OneDrive link.

In order to build the handwriting recognition model, you have to follow five steps:

1. Design a CNN classifier for characters (Latin alphabet: a-z, A-Z) and digits (0-9)
2. Design character and digit segmentation for the handwritten part of the image
3. Perform classification of each segmented character and digit
4. Find spaces between words
5. Get the final word in the image

You must demonstrate two versions of your system:

1. Show how the classifier works in a given input image, e.g. by applying boxes around every character and digit (e.g. using one image from the test set and show step by step the process)
2. Show how it works in real time, e.g. use a camera that records while someone is writing a short text and print that text in the terminal/screen