Homework 7

Due: November 29, 2018, 11:59 PM EST

Instructions

Your homework submission must cite any references used (including articles, books, code, websites, and personal communications). All solutions must be written in your own words, and you must program the algorithms yourself. If you do work with others, you must list the people you worked with. If you solve any problems by hand just digitize that page and submit it (make sure the problem is labeled).

Your programs must be written in Python. All code must be able to compile and run for full credit. Comment all code following proper coding conventions. Remember, if we can't read it, we can't grade it! (For more information on python coding standards, refer to: *https://www.python.org/dev/peps/pep-0008/*)

You should submit your assignment via Github. Submit your solutions as a PDF named "hw(hw #).pdf". For example, homework 7 should be submitted as hw07.pdf. If the assignment requires coding, submit your working code as a .py file with the same name.

If you have any questions address them to:

- Connor McCurley (TA) – cmccurley@ufl.edu
- Xiaolei Guo (TA) – suninth@ufl.edu
- Daniel Wells (TA) – dwells@ufl.edu

Question 1 - 10 points

For this assignment you will be creating data for Project01. You are to **hand-write** the letters 'a','b','c','d','h','i','j', and 'k' **ten times each**. You should write these letters on clean, white printer paper. It is preferred that you use a regular black Sharpie.

After writing the letters, you are to crop the images (this can either be done on your phone or computer). Try to center and focus the numbers as much as possible. (Please refer to the sample provided).

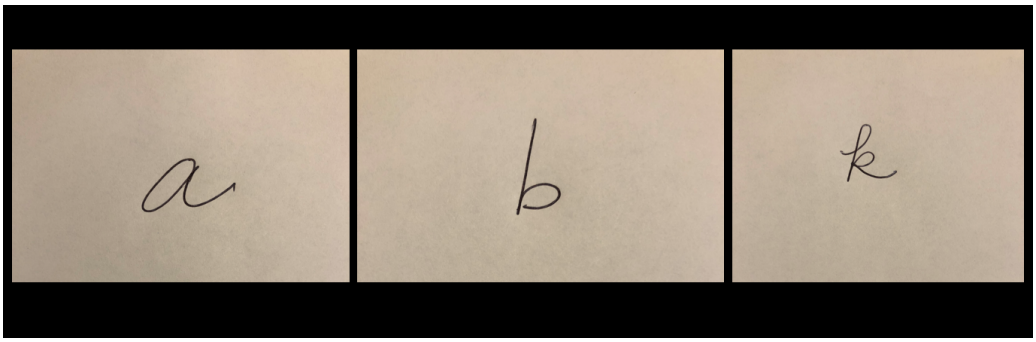

Figure 1: Acceptable image examples

You can then run the provided code, *hw07.py*, to generate binary images. Combine all data into a ndarray object (the same format as the back-up data for Project01) and name it "data.npy". Also provide an array of labels called "labels.npy". As specified in Project01, labels for 'a','b','c','d','h','i','j', and 'k' should correspond to 1,2,3,4,5,6,7, and 8, respectively.

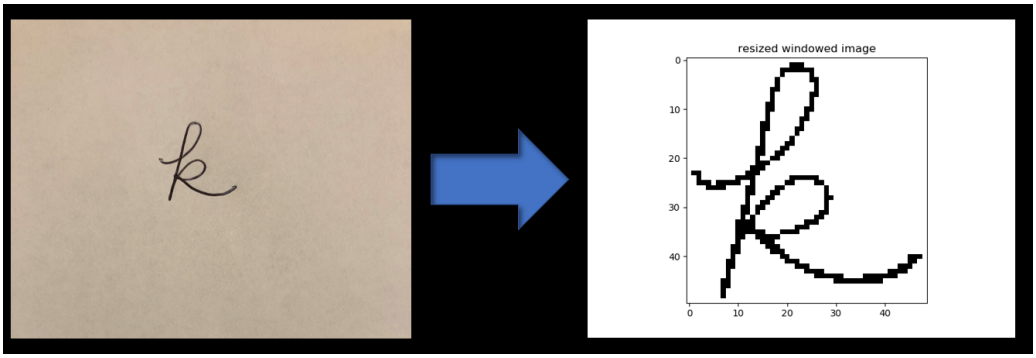

Figure 2: Digitized image of a hand-written "K"

To receive full credit for assignment 07 you should push your full directory of images, your binary image object and label vector. These files must be **named and formatted correctly for full credit.** Please ensure the data is properly pushed to the repository.