Custom OCR Project Report

Firstly,I found the threshold of test_img and characters using histogram with 10 bins and took the average of the value of the last two bins where there was a peak.I used this threshold to convert grayscale image to black and white.

Feature Computation:

I padded the black and white image with 5 white pixels on all sides and then applied gaussian blur with sigma=2. Computed the features on this blurred image with SIFT feature extractor.

Although SIFT applies gaussian blur internally, somehow there was a significant improvement after applying it manually first.

Detection:

Just applied DFS and considered neighbouring pixels with value 0 to be a connection and 255 to be not.

Also had to increase the recursion limit.

Recognition:

1. Computed features for detected characters in the test image
2. Matched them with each of the enrolled characters
    a. Used Euclidean distance for comparing the descriptors
    b. Applied a thresholding of 0.8 for ratio between smallest and second smallest distance to consider it a match
    c. Returned the sum of smallest distances matching the above criteria, divided by number of matches
3. Set total distance threshold to 200 and min_features match to 4
4. Assigned the closest enrolled character or “UNKNOWN” if none matched

Thanks for the thoughtful project. Learned a Lot