

MMIST dataset

In this assignment we loading mnist dataset and take 10000 sample to train and 1000 sample to test, and start to grid the images, extracting features with calculating the centroid of each grid, and then using knn classifier.

- experiment 1:
 - grid images into 7x7
 - using knn with k=10 -the accuracy= 81.5%
- experiment 2:
 - grid images into 7x7
 - using knn with k=5 -the accuracy= 83.6%
- experiment 3:
 - grid images into 7x7
 - using knn with k=3 -the accuracy= 84.3%
- experiment 4:
 - grid images into 4x4
 - using knn with k=10 -the accuracy= 81.9%
- experiment 5:
 - grid images into 4x4
 - using knn with k=5 -the accuracy= 83.3%
- experiment 6:
 - grid images into 2x2
 - using knn with k=10 -the accuracy= 89.2%
- experiment 7:
 - grid images into 2x2
 - using knn with k=4 -the accuracy= 90.3%
- experiment 8:
 - grid images into 2x2
 - using knn with k=3 -the accuracy= 89.5%

from the previous experiments, experiment 7 give us the highest accuracy.