

Final Project Second Update

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Since the initial proposal, I have completed the classification of the data using SVM.

First I define two function to read the labels and the features. The training data set includes 10000 data. The features is 10000*784, and the label is 10000*1, which value is 0~9. In this program, I used sklearn to complete the classification. In the code, I used GridSearchCV to introduce N_jobs to the CPU for multithreading. When N_jobs =-1, the number of parallelism of the program will be the same as the number of cores of the CPU, thus greatly accelerating the running of the program. Here I use the parameters to add the corresponding parameter. The settings are default settings. Here I use the fit function to train the model. Then use the predict function to predict the test labels. Then I compare the predicted labels and the test labels to test the accuracy. The training time is 3.973 seconds. And the accuracy is 98.2%.

Next I plan to use the Neural Networks to do the classification to find a more accurate classifier.

Project Github:

The link of project github page is <https://github.com/Jiaqichengood/ECE532-Project>.

Project timeline:

- Oct 22nd: Project starts.
- Nov 17th: Research on the implement of the algorithms to the project. Finish the first update of the project.
- Nov 28th: Finish the classifier design using the ridge regression algorithm and the SVM.
- Dec 1st: Finish the second update of the project.
- Dec 10th: Finish the classifier design using the Neural Networks.
- Dec 12th: Compare the performance of different algorithms. Finish the final project report.
- Dec 17th: Review of two projects from the peers.