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Machine Learning Final Project Proposal

1. Project Goal:

Handwritten Digit Recognition

Based on the MNIST database of handwritten digits, I will use some machine learning methods to train the training set and get the classifier. Then I will use the classifier to recognize the examples in test set. Finally, I will get the accuracy and compare the accuracy I get by using different methods.

2. Data Set

The MNIST Database of handwriting digits.
Four files are available on this site:
train-images-idx3-ubyte.gz: training set images (9912422 bytes)
train-labels-idx1-ubyte.gz: training set labels (28881 bytes)
t10k-images-idx3-ubyte.gz: test set images (1648877 bytes)
t10k-labels-idx1-ubyte.gz: test set labels (4542 bytes)

3. Methods

I plan to use three main methods:
K Nearest Neighbors; SVM; Random Forest Classifier.
If the previous three methods go well, I will try deep neural network such as convolutional neural network.

4. Expected Results

I will get the accuracy on test imagines, compare accuracies of different methods and visualize the results.