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Machine Learning Final Project Proposal

1. Project Goal:

Handwritten Digit Recognition

Based on the MNIST database of handwritten digits, some machine learning methods will be used to train the training set and get the classifier. Then I will use the classifier to recognize the examples in test set. Final step is to get the accuracy and compare the accuracy got 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

The plan is 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

Accuracy on test imagines and comparisons of accuracies by using different methods will be showed and visualized.