ECE 283: Machine Learning Project

Project group:

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Tentative project title:

Fashionable Learning

Project description:

Training multiple machine learning architectures on a dataset containing images of 10 different types of clothing, in order to get a high accuracy performance on the test dataset. The reason why we want to do this project is to get deeper knowledge in Tensorflow. We also want to train ourselves in developing different types of neural network architectures and investigate their pro's and con's.

Extension: Normalize the shoe dataset to fit Fashion-MNIST, to train on one dataset, and test on another.
Extension: Normalization algorithm for new data taken by an arbitrary camera.
Extension: Unsupervised learning by classifying the dataset without using the labels.

Dataset:

A MNIST-like fashion product database: https://github.com/zalandoresearch/fashion-mnist
Shoe dataset: http://vision.cs.utexas.edu/projects/finegrained/utzap50k/
Apparel dataset: http://www.vision.ee.ethz.ch/~lbossard/projects/accv12/index.html

Learning/inference techniques:

- CNN
- Possible alternatives: Logistic regression, SVM, RNN