Handwriting Recognition and Sentimental Analysis

Goals of the project

- Face Detection
- Get the basics of NLP
- Most important of all, get a brief introduction to the field of Machine Learning

First goal was to learn python.

Hence to get the basics of the language I made a Scrabble Cheater.

It takes a file as input which is a dictionary and then provides the scores of all the possible words from the alphabets at hand.

Source :https://openhatch.org/wiki/Intermediate_Python_Workshop/Projects

Code: https://github.com/siddsax/ACA/tree/master/Learning_Python

Another important library for M.L. in python is numpy for which I read through the following source.

Source :http://cs231n.github.io/python-numpy-tutorial/

Learning about Naive Bayes Classifier

Followed a tutorial : http://machinelearningmastery.com/naive-bayes-classifier-scratch-python/

The test problem used in the tutorial is the Pima Indians Diabetes problem.

The tutorial assumes that the data set is part of a normal probability distribution. Hence it finds out the mean and variance from it and then finds the probability of each element of the feature to be that of diabetic data point or not and then multiplying all of them assuming them to be independent of each other hence finding out if the a data point to be diabetic or not.

Code : https://github.com/siddsax/ACA/tree/master/Diabetes_Classifier

Face Recognition using Eigen-Faces

In order to understand Eigen-faces we first got the intuition of it from PCA which is a technique to find the principal components of the data to capture the real essence of it which may be lost in higher dimension.

Source : https://georgemdallas.wordpress.com/2013/10/30/principal-component-analysis-4-dummies-eigenvectors-eigenvalues-and-dimension-reduction/

Then I read the following paper and on its basis coded the face recognition code.

Source :http://www.face-rec.org/algorithms/PCA/jcn.pdf

Code:

Deep Learning

We also explored the field of Deep Learning. Knowing about artificial neurons, perceptrons, sigmoid neurons, backpropagation, softmax classifier, finding how it could learn any non-linear function possible.

Source: http://neuralnetworksanddeeplearning.com

The tutorial consisted of the code for Handwriting recognition on the MNIST database which is on the link.

Source: https://github.com/siddsax/ACA/tree/master/Neural_Networks

Face Recognition using Eigen-Faces

Read about what is stemming and Lemmatization.

THANKS!

Thank You

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