Introduction to Tensorflow

Winter in Data Science(WiDS)

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1. Week 1

The week 1 comprised of going through a Machine Learning Course spanning 5 hours in Total.

The course compromised details on:

Types of Machine Learning: Supervised and Unsupervised

Linear and Logistic Regression

Cost functions and how to decide them

Gradient Descent

Feature Scaling for Gradient Descent

Overfitting and Underfitting

Decision Boundaries

The latter Half of the week compromised of:

Installing and getting familiar with Scikit Learn

Fitting a diabetes data set using Linear Regression

Understanding various Classifiers

Comparing each classifier on the ‘Iris’ Dataset

1. Week 2

The week began with an introduction to Tensorflow Tutorial where a little of Keras was discussed too since it would be relevant while using Tensorflow.

I then worked on two tutorials listed Below

1. Prediction of Fuel Efficiency on using the Auto MPG Dataset using Regression

The initial regression was done via Linear Regression with a single input and then with multiple inputs. Later we performed regression with Deep Neural Networks and

1. Convolution Neural Networks to Classify CIFAR Images

The process involved taking images and adding noise to the images. The principle was that the Computer Learned how to get back the original image from random noise since it could learn how the noise is being generated over an image. This served as an introduction to Diffusion Models.

1. Project

The project consisted of using Long Short Term Memory networks which use Artificial Neural Networks to predict stock prices.