Linear Regression With TensorFlow Introduction

Michael Stewart

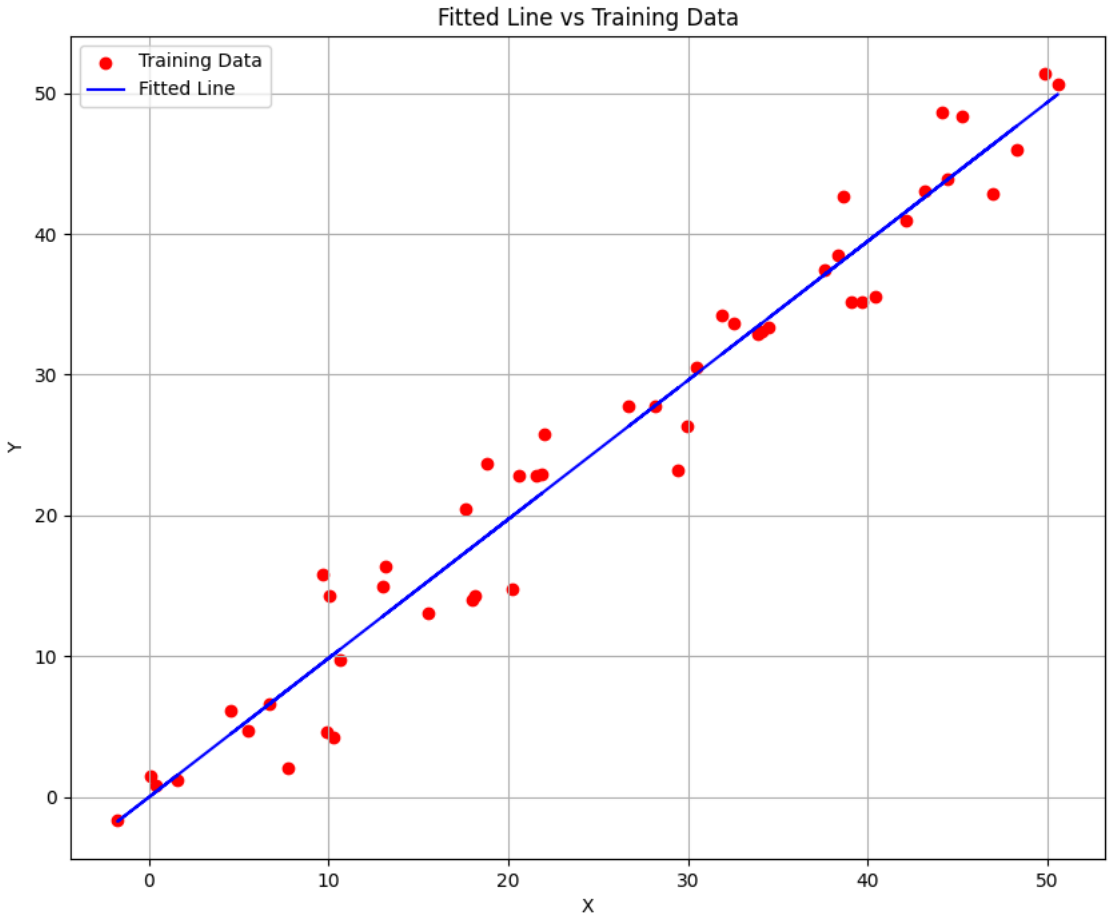
Colorado State University Global

CSC580-1: Applying Machine Learning and Neural Networks - Capstone

Professor Isaac Gang

October 6, 2024

Linear Regression With TensorFlow Introduction



In this module, I created a linear regression model to fit a random set of points on a graph. I started off with the sample code from the assignment and then used the week's lesson plans to continue the rest. One of the struggles I encountered was using TensorFlow 2 instead of 1. I'm using this since it is the latest, but the code written in the modules uses TensorFlow 1. Because of this, I have some TensorFlow.compat.v1 functions. I also used my input data in the optimizer instead of the placeholder data. This led to the optimizer making the line flat instead of fitting the dots. After those things were fixed, the model performed as expected and fit the data above.

```
step 996, loss: 481.481781 Weight: 0.987802 bias: -0.037951
step 997, loss: 481.481781 Weight: 0.987802 bias: -0.037951
step 998, loss: 481.481720 Weight: 0.987802 bias: -0.037951
step 999, loss: 481.481720 Weight: 0.987802 bias: -0.037951
[[0.98780185]]
```

References

Ganegedara, T. (2022). *TensorFlow in action*. Simon and Schuster.

tf.compat.v1.summary.FileWriter. (n.d.). TensorFlow. Retrieved October 6, 2024, from https://www.tensorflow.org/api_docs/python/tf/compat/v1/summary/FileWriter