

Linear Regression: Deep Learning

Olaniyi Bayonle Alao

Summer Term, 2021

Bachelor of Electronic Engineering

Hochschule Hamm-Lippstadt

Lippstadt, Germany

olaniyi-bayonle.alao@stud.hshl.de

Abstract—this paper talks about linear regression in the context of deep learning. Linear regression is a statistical term that uses a dependent and independent variable to make predictions. In these papers, the use case of linear and multiple regression is used to predict data in machine learning. The data were gotten from kaggle.com. The data is a data of the titanic survivors and the model was trained using sci-kit or tensor flow.

data cleaning was done using pandas a python library to prepare the data for model training.

regression analysis as a whole is a statistical method used to understand the relation between dependent and independent variables.

with the rise in the amount of data we have access to and increase in the performance of computers, Machine Learning a subset of Artificial intelligence has seen a significant growth. machine learning refers to is the ability of applications to get better at doing things without necessarily a change in the code base. This is something that has really been helpful.

even though machine learning isn't a new concept, it is fast gaining recognition and changing lives thanks to the increase in the processing power of computers over the years to be able to process big data at a level that has never been experienced.

Index Terms—machine learning, linear regression, deep learning, sci-kit, tensor flow

I. INTRODUCTION

This document is a model and instructions for L^AT_EX. Please observe the conference page limits.

- talk about the different types of regression but focus on multiple linear regression.
- Linear regression theoretical background
- method used in the paper
- application case analysis ==/> algorithm implementation ==> results
- conclusion

II. THEORETICAL BACKGROUND

A. Machine Learning

talk briefly about

- machine learning....types of it and what it is even about
- deep learning....what is it about?

B. Regression

talk about and also dive deep into the mathematics involved....

- how regression came about Francis something
- types of regression linear and multiple

- what is it used for + how is it used?
- use in the context of this paper i.e machine learning

C. Model Evaluation

- R^2
- talk about k-fold cross-validation....used to determine how well the model worked

D. Libraries and Tools used

talk about

- python and the library been used.....matplotlib, pandas, numpy
- machine and deep learning frameworks in python
- describe the relevant parts of tensorflow/sci-kit.... what are they applied to and mapping the code to the regression formula?
- for now thinking of using sci-kit as there is much tutorials based on it.

III. PRACTICAL EXAMPLE

- framework that will be used and maybe why it is being used
- preparing data for modelling.....removing useless data and reason for doing so!
- coding to train the model and test it

IV. RESULT

talk about the results of the findings

V. CONCLUSION

finish by highlighting the strength of linear regression as well as the shortcomings.