SDG 13 CLIMATE ACTION

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INTRODUCTION:

Our team worked on the topic 'Climate Change'. We analysed the given data and tried to predict the chances of rain in the next day.

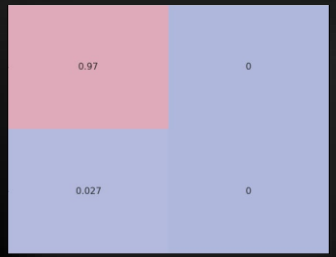
DATASET:

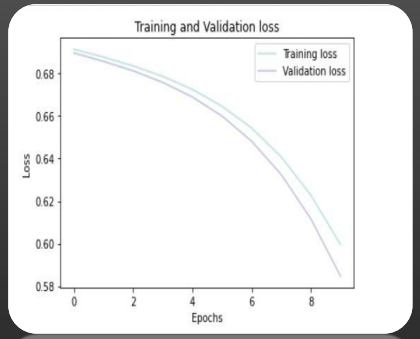
Our team used:
1)TS Open weather data 2021
2)TS Open Rainfall data 2021
3)TS Open Weather 2020
4) TS Open Weather Data 2019
5)TS Open Weather Data 2018

METHODS:

The programming language we used is Python.
We used tools like:
* matplotlib
* sklearn
* keras
* pandas
* numpy

We have also used and trained our own Neural Network each with 4 layers using relu and sigmoid functions.
we have classified them district and mandal wise by using the nn to predict rainfall.
Each layer has 32 units and dense network.



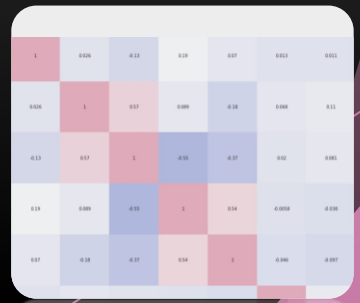


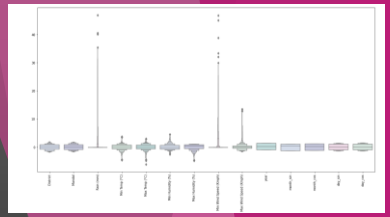
RESULTS:

We successfully predicted the chances of rain in the next day by analysing the data of the previous days.
We have trained 10 epochs and gained an accuracy of 97.25 with a minimal loss of 0.5995
Our total time

EXTENSIONS

1) We have prepared a dataset from jan to march for the period 2018-21 this can be extended for all the months and longer period. 2. Try adding more hidden layers and try making the model more robust. 3. We can even establish a relationship from the satellite predictions including cyclone data, etc. 4. Can even try establishing a relationship between the available data and thermal imaging of cloud.





TAKEAWAYS:

The windspeed and humidity put a great affect in predicting rainfall.
The prediction of rainfall can be estimated at a very high rate in the month between Jan and march in the last 3 yeas.

REFERENCES:

1) https://data.telangana.gov.in/
2) https://www.kaggle.com/
3) http://data8.org/datascience/