NAANMUDHALVAN-IBM SKILL

ARTIFICIAL INTELLIGENCE

GROUP PROJECT

Project Title: Earthquake Prediction model using python.

Phase I. Submission

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Problem statement and Design thinking

Problem Statement

We need to replicate a real scenario in our dataset and add the time periods with no seismic events in our time frame. That ensures that we will evaluate the predictions even when there is no earthquakes.

Design thinking

We will take you through how to create a model for the task of Earthquake Prediction using Machine Learning and the Python programming language. Predicting earthquakes is one of the great unsolved problems in the earth sciences.

With the increase in the use of technology, many seismic monitoring stations have increased, so we can use machine learning and other data-driven methods to predict earthquakes

we need to scale it based on the model inputs. In this, we convert the given date and time to Unix time which is in seconds and a number. This can be easily used as an entry for the network we have built.

Data Visualization

we create the earthquake prediction model, let's visualize the data on a world map that shows a clear representation of where the earthquake frequency will be more.

Splitting the data

- We create the earthquake prediction model, we need to divide the data into Xs and Ys which respectively will be entered into the model as inputs to receive the output from the model.
- Here the inputs are Timestamp, Latitude and Longitude and the outputs are Magnitude and Depth.

Neural Network for Earthquake Prediction

We will create a neural network to fit the data from the training set. Our neural network will consist of three dense layers each with 16, 16, 2 nodes and reread. Relu and softmax will be used as activation functions.

And also we define the hyper parameters with two or more options to find the best fit and by get the mean test score and standard deviation of the best fit model.

Conclusion

By analysing the data visualization ,splitting the data and neural network we are predicting the earthquake by using the python programme.