

Earthquake Prediction Model using Python

Problem Definition and Design Thinking:

Explore the key features of earthquake data and design an object for those features, such as date, time, latitude, longitude, depth, and magnitude. Before developing the prediction model, visualize the data on a world map to display a complete overview of where the earthquake frequency will be higher. Split the data into a training set and a test set for validation. Lastly, build a neural network to fit the data from the training set.

Problem Definition:

To work with earthquake data, design an object that encapsulates essential attributes such as date, time, latitude, longitude, depth, and magnitude. Afterward, visualize the data on a world map to gain insights into regions with higher earthquake frequency. To prepare for model development, split the dataset into training and test sets for validation purposes. Finally, construct a neural network to train on the training set and make predictions based on this structured earthquake data.

Design Thinking:

1. Define the object of earthquake data: To represent earthquake data, create a python class that include date, time, latitude, longitude, depth and magnitude.

2. Data visualization on world map: To visualize earthquake data on a world map, use libraries like “matplotlib” and “basemap”. First, extract latitude and longitude data from the earthquake dataset and plot it on a map.

3. Split Data into Training and Test Sets: Before building a neural network for prediction, split the earthquake data into training and test sets. The training set will be used to train the model, while the test set will be used to evaluate its performance. Use Python libraries like `scikit-learn`.

4: Build a Neural Network Model: To build a neural network model for earthquake magnitude predicting a deep learning library like TensorFlow and Keras are used.