

Earth Quake Prediction and Analysis by using python

Abstract

An earthquake is shaking of the surface of the Earth, which caused as the result of movable plate boundary interactions. Earthquakes are measured using remarks from seismometers with Richter magnitude scale. Ground rupture, Landslides, Soil liquefaction and Tsunami are the main effects created by earthquakes. Today's earthquake warning systems used to provide regional notification of an earthquake in progress. Many methods have been already developed for predicting the time and place in which earthquakes will occur, but it did not predicted using big data analytics. This journal know that the Standard Deviation to identify next earthquake happening from tons of international geological survey data using data analysis in pandas & matplotlib framework. It's the top-level component of all the ones that you will consider in the following point current location shakes per minute. Other than above mentioned features separate pandas and matplotlib function implemented to analyze sheer number of earthquakes per day. Final result shows which location suffered from maximum number of shakes and priority of earthquake occurrence location and Time.

Keywords: Earthquake, Seismic waves, Seismometer, Richter magnitude scale, Tsunami, Earthquake warning systems, Big Data, Map Reduce

INTRODUCTION

Today, big data analytics is one of the most booming markets.

When Google search engine launched image search feature, it had indexed more than 300 million images. In every minute so many video content are uploaded in YouTube update their wall in every minute. Search engines logging 600 million queries daily. There are different data centers where people can store vast amount of data, such as IBM Server, EMC Server etc. On the other hand AWS (Amazon Web Services) provide a host of services to store, process and analyze the data at scale in a cost effective manner. Big data term refers collection of large datasets that are distributed, multi-dimensional and complex that it becomes difficult to processing on hand traditional data processing applications.

EXISTING SYSTEM

The existing system addresses novel methodology to predict next earthquake. Apache hadoop is designed to run in a distributed environment and it manages the collection of various nodes running map and reduce function. In this system data analysis performed on earthquake data in year wise and location wise. The result indicates that next possible earthquake location identified correctly. The existing system Mapper and Reducer class applicable any U.S. geological earthquake survey data in this function some drawbacks in data handled but pandas overcome the problems that way using pandas & matplotlib frame work reduce the problem and predict the possible output.

Earthquakes have always caused incalculable damage to structures and properties and caused the deaths of millions of people throughout the world. In order to minimize the impact of such an event, several national, international

and transnational organizations take various disaster detection and prevention measures. Time and quantity of the organization's resources are limiting factors, and organization managers face several difficulties when it comes to the distribution of the resources.

Leveraging the power of machine learning is a viable option to predict the degree of damage that is done to buildings post an earthquake. It can help identify safe and unsafe buildings which helps to predict damage prone areas and thus avoiding death and injuries resulting from the aftershock of an earthquake, while simultaneously making rescue efforts efficient. This is done by classifying these structures on a damage grade scale based on various factors like its age, foundation, number of floors, material used and several other parameters.

Then the number of families and the probable casualties ward-by-ward in a district are taken into account. This enables distribution of relief forces proportionately ward-wise and its prioritization based on the extent of damage. Models of this kind can help save as many lives as quickly as possible and turn out to be an efficient and cost-effective solution. It can be further improved by the inclusion of distribution of resources like food, clothes, medical, monetary supplies based on the extent of human casualties and the damage incurred by the various structures.

The main disadvantage of the existing system is highly expensive. And the portability of the Device is very difficult. The Existing system using only converts using modules county and number of earth quakes only provided.