D Y PATIL INTERNATIONAL UNIVERSITY
AKURDI PUNE

Third Year Summer Internship Evaluation Presentation On

EARTHQUAKE PREDICTION

School of Computer Science Engineering & Applications
2023

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PROBLEM STATEMENT

Earthquakes are natural disasters that can cause significant damage and loss of life. Accurate prediction of earthquakes is essential for developing early warning systems, disaster planning, risk assessment, and scientific research. This project aims to predict the magnitude and probability of Earthquake occurring in a particular region (California, United States) from the historic data of that region using various Machine learning models.

DATASET

The Dataset used in this project is called the "SOCR Earthquake Dataset", and it contains information about earthquakes that have occurred with a magnitude of 3.0 or greater in California, United States.

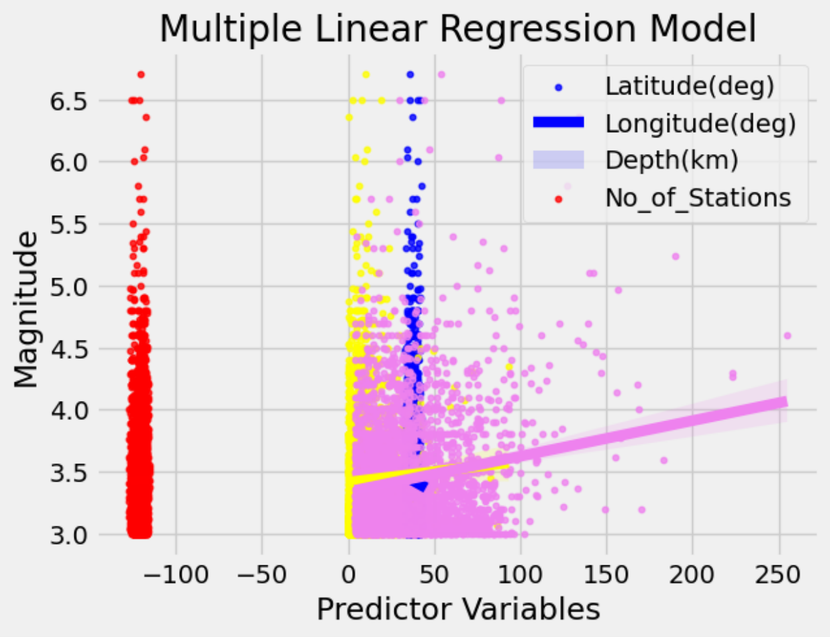
CONTENT

- Date and time of the earthquake
- Latitude and longitude(in degree)
- Depth of the earthquake
- Magnitude of the earthquake
- SRC = source
- nst - number of stations used for solution
- close - distance of closest station to epicenter
- rms - root-mean-squared residual of solution
- gap - azimuthal gap

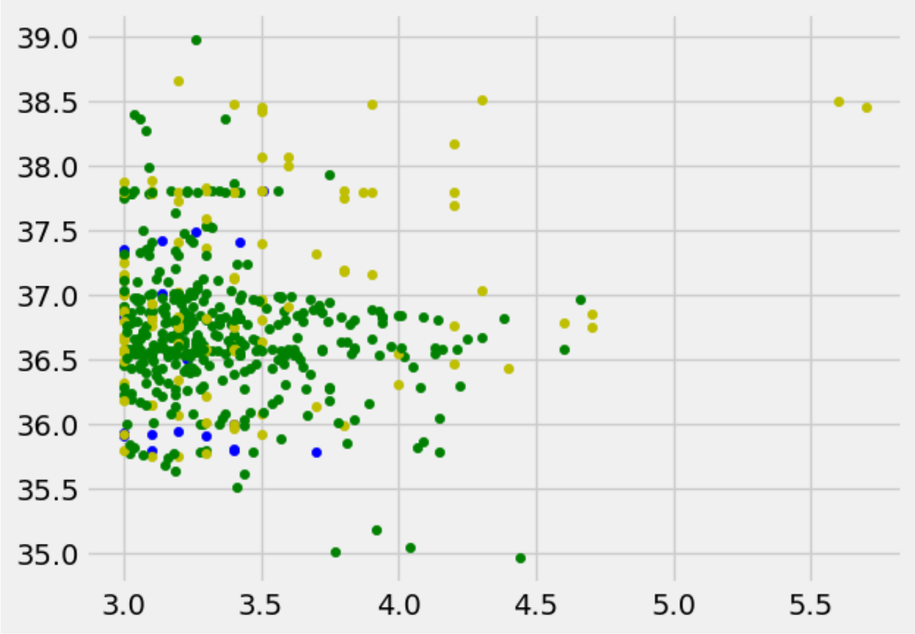
ALGORITHMS USED:

- Linear Regression
- Support Vector Machine
- Naive Bayes
- Random Forest

GRAPH

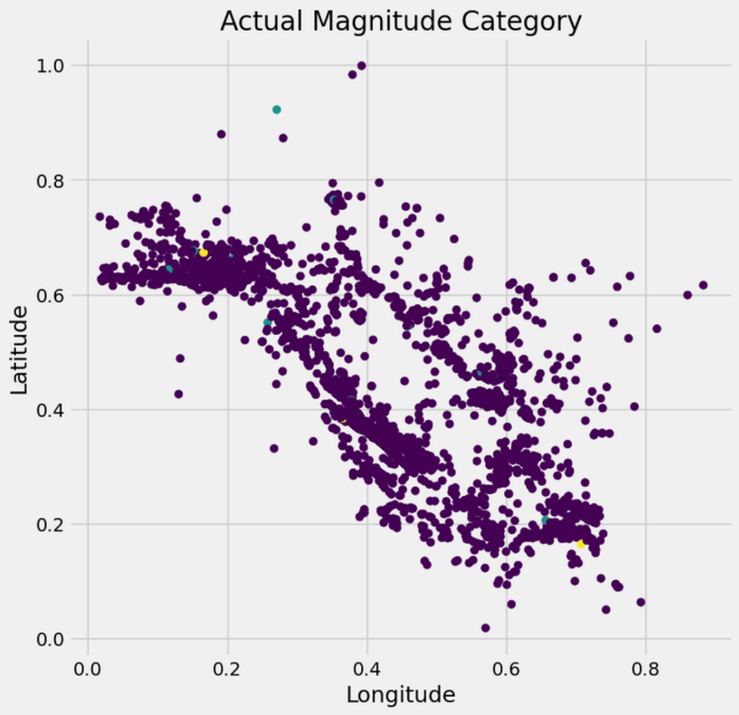


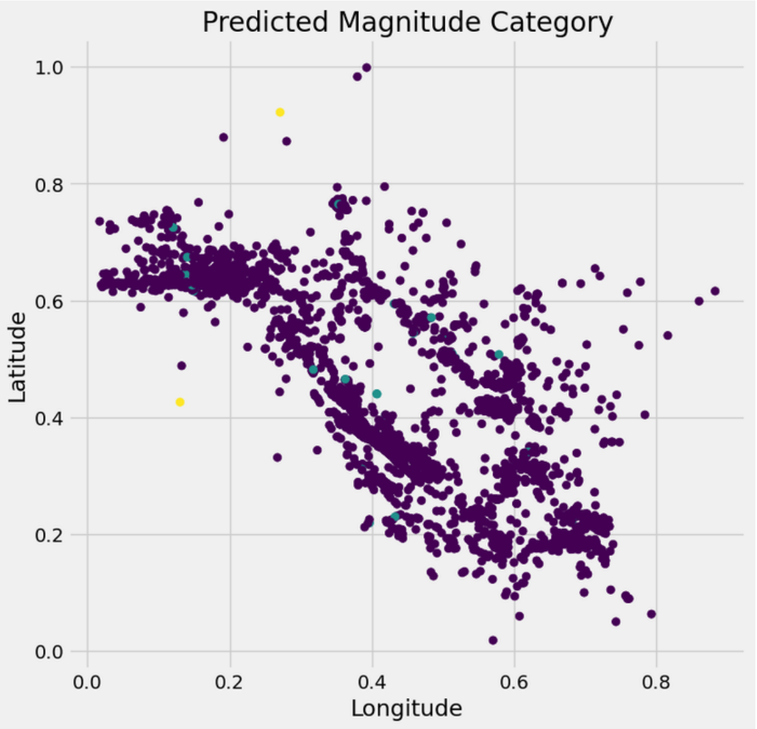
Multiple linear regression plot using seaborn library (python)



SVM plot using matplotlib.pyplot library(python)

NAIVE BAYES GRAPH

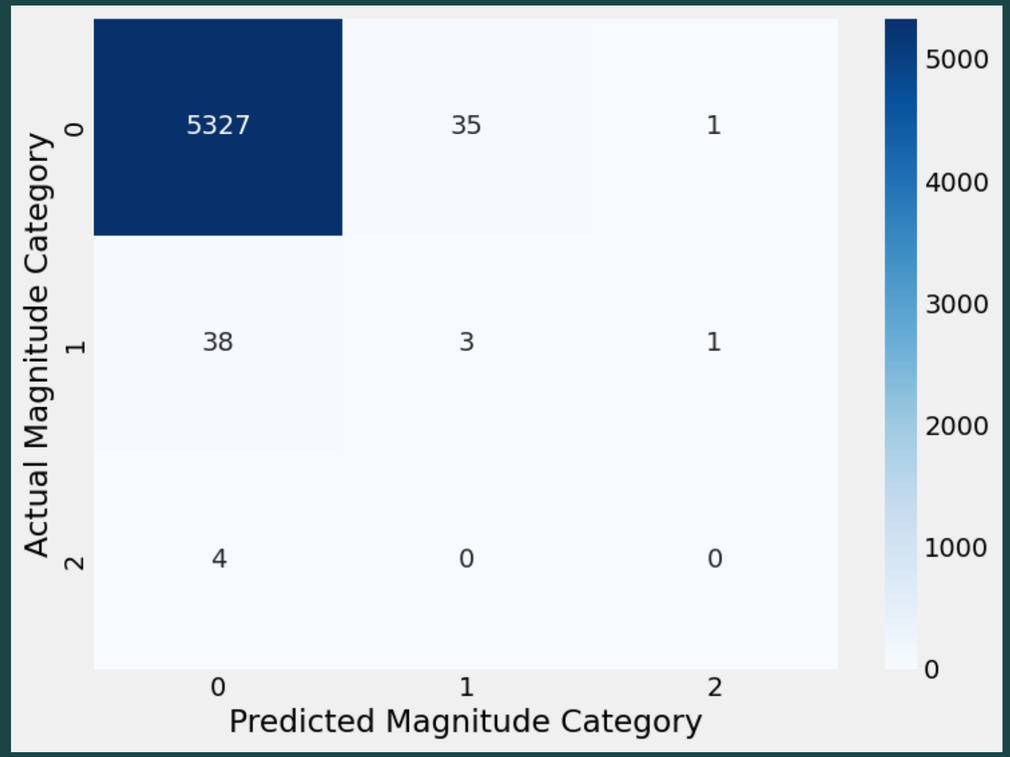




Accuracy: 0.9853947125161767

Confusion Matrix: [[5327 35 1] [38 3 1] [4 0 0]]

Heatmap of Confusion Matrix:



REFRENCES

1. http://socr.ucla.edu/docs/resources/SOCR_Data/SOCR_Data_Earthquakes_Over3.html
2. https://www.javatpoint.com/linear-regression-in-machine-learning
3. https://www.simplilearn.com/tutorials/machine-learning tutorial/random-forest-algorithm
4. https://www.researchgate.net/publication/215837001_Earthquake_Prediction_A_global_review_and_local_research

Thank You