

# 1. Earthquake Prediction Model (Time Series)

The project aims to release warnings about the possibility of earthquakes to implement safety measures and help minimize damage. Machine learning on Frontera has successfully predicted earthquake risk.

Method: The Time Series Analysis projects in Github can be used to obtain the datasets to work on this project. The data is random and it is essential to scale the same as the inputs to the model. Classify the data into training and test sets with 80% in the first set and 20% in the second set, respectively. Time series analysis projects can be developed in Python and combined with neural networks to build earthquake prediction systems. Data visualization tools will also be effective in displaying data on a world map.

Data:

<https://www.kaggle.com/datasets/gustavobmgm/earthquakes-for-ml-prediction-new-version>

# 2. Inappropriate Comments Scanner (NLP)

The 21st century is the age of social media. On one hand, many small businesses are benefiting and on the other, there is also a dark side to it. Thanks to social media, people are aware of ideas they are not used to. While few people take it positively and make an effort to get used to it, many people start going in the wrong direction and start spouting malicious words. So many social media apps take the necessary steps to remove these comments in order to protect their users, and they do so using NLP techniques.

Method: The dataset for this project is freely available on Kaggle. This dataset can be used to classify the comments as toxic or non-toxic. For this project, textual data preprocessing techniques need to be used first. After that, basic NLP methods like TF-IDF for converting textual data into numbers could be performed, and then machine learning algorithms can be used to label the comments.

Data:

<https://www.kaggle.com/competitions/jigsaw-toxic-comment-classification-challenge/data?select=train.csv.zip>

### 3. Facial emotion recognition (Image processing)

The process of human communication is inextricably linked to the fluctuation of various emotions. When people are experiencing basic emotions, their faces will display various expression patterns, each with its own set of characteristics and distribution scale. Facial expression recognition is a crucial part of human-computer interaction that allows computers to understand facial expressions based on human thinking.

Data: <https://www.kaggle.com/datasets/chiragsoni/ferdata>