

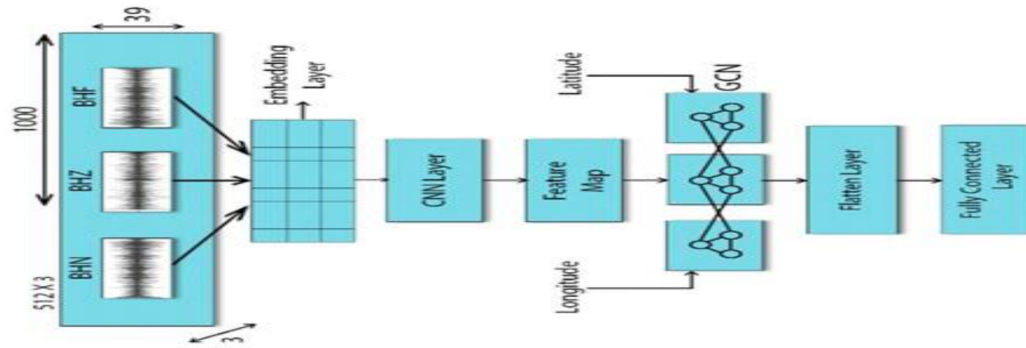
Name :S.Priyanka

Register number :513521104039

Project : phase _4

College :AMCET

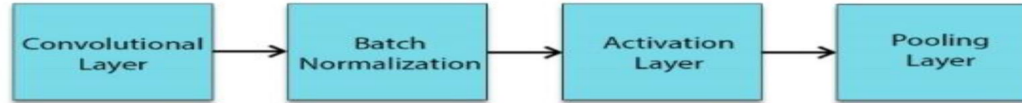
Presentation Of CNN :



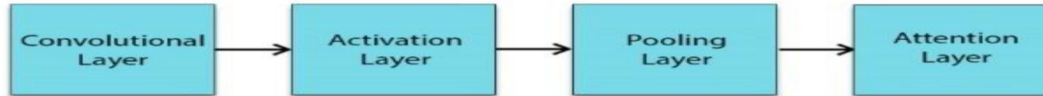
(a) The simple architecture of GCNN model



(b) Representation of the CNN block



(c) CNN block with batch normalization



(d) CNN block with attention layer



(e) CNN block with batch normalization and attention layer

Objective of earthquake prediction ?

Is to develop effective predicting methods for the occurrence of the next severe earthquake event that may allow us to reduce the death toll and property damage..

Key concept of Earthquake prediction?

An Earthquake is what happens when two blocks of the earth suddenly slip past one another the surface where they slip is called the fault or fault plane..

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
```

```
import warnings
warnings.filterwarnings('ignore')
```

```
df = pd.read_csv('dataset.csv')
df.head()
```

	Origin Time	Latitude	Longitude	Depth	Magnitude	Location
0	2021-07-31 09:43:23 IST	29.06	77.42	5.0	2.5	53km NNE of New Delhi, India
1	2021-07-30 23:04:57 IST	19.93	72.92	5.0	2.4	91km W of Nashik, Maharashtra, India
2	2021-07-30 21:31:10 IST	31.50	74.37	33.0	3.4	49km WSW of Amritsar, Punjab, India
3	2021-07-30 13:56:31 IST	28.34	76.23	5.0	3.1	50km SW of Jhajjar, Haryana
4	2021-07-30 07:19:38 IST	27.09	89.97	10.0	2.1	53km SE of Thimphu, Bhutan

The dataset we are using here contains data for the following columns:

Origin time of the Earthquake

Latitude and the longitude of the location.

Depth – This means how much depth below the earth's level the earthquake started.

The magnitude of the earthquake

df.shape

Output:

(2719, 6)

df.info()

Output:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2719 entries, 0 to 2718
Data columns (total 6 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Origin Time     2719 non-null   object
1   Latitude        2719 non-null   float64
2   Longitude       2719 non-null   float64
3   Depth          2719 non-null   float64
4   Magnitude       2719 non-null   float64
5   Location        2719 non-null   object
dtypes: float64(4), object(2)
memory usage: 127.6+ KB
```

df.describe()

Output:

	Latitude	Longitude	Depth	Magnitude
count	2719.000000	2719.000000	2719.000000	2719.000000
mean	29.939433	80.905638	53.400478	3.772196
std	7.361564	10.139075	68.239737	0.768076
min	0.120000	60.300000	0.800000	1.500000
25%	25.700000	71.810000	10.000000	3.200000
50%	31.210000	76.610000	15.000000	3.900000
75%	36.390000	92.515000	82.000000	4.300000
max	40.000000	99.960000	471.000000	7.000000

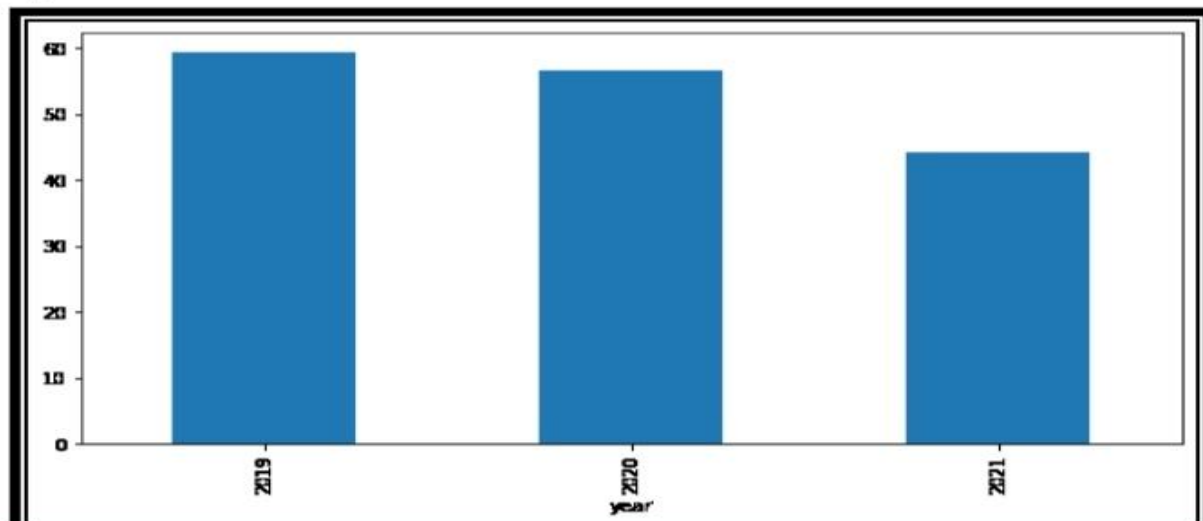
Exploratory Data Analysis

[EDA](#) is an approach to analyzing the data using visual techniques. It is used to discover trends, and patterns, or to check assumptions with the help of statistical summaries and graphical representations.

```
plt.figure(figsize=(10, 5))  
x = df.groupby('year').mean()['Depth']  
x.plot.bar()  
plt.show()
```

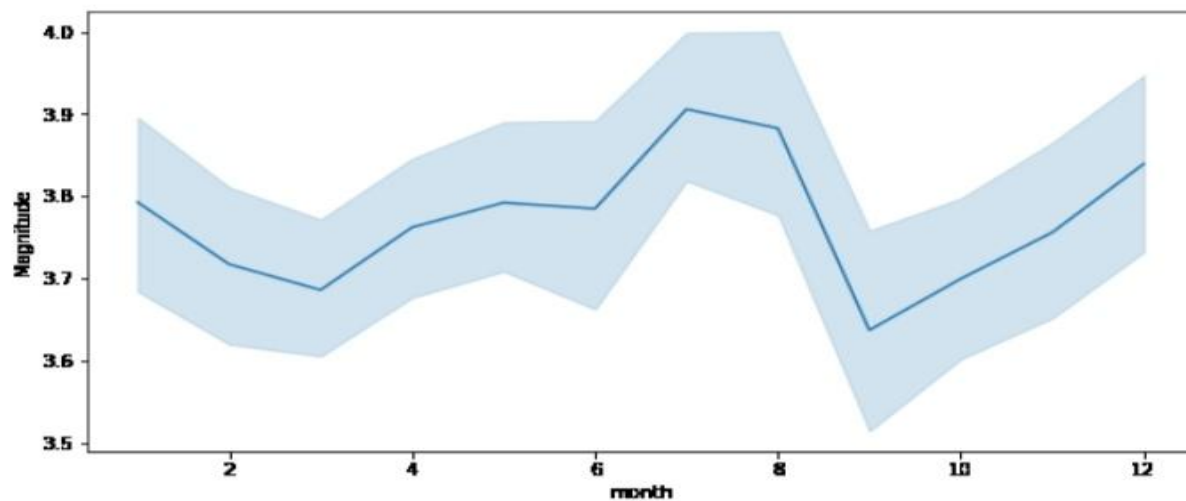
Output

:



```
plt.figure(figsize=(10, 5))
sb.lineplot(data=df,
            x='month',
            y='Magnitude')
plt.show()
```

Output:



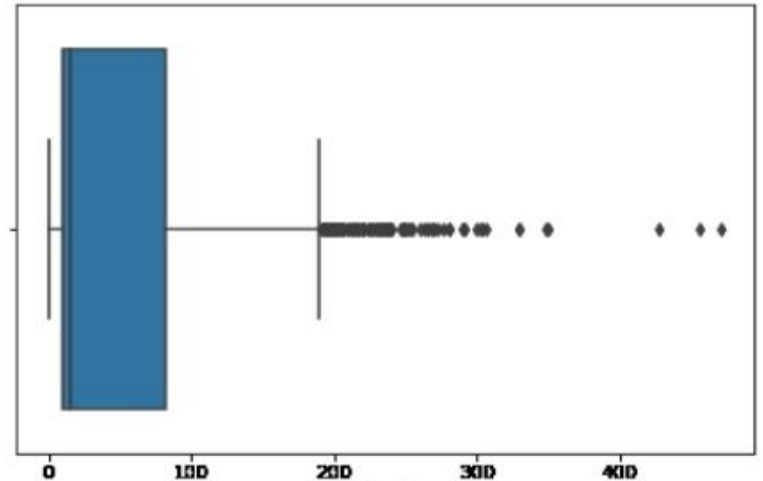
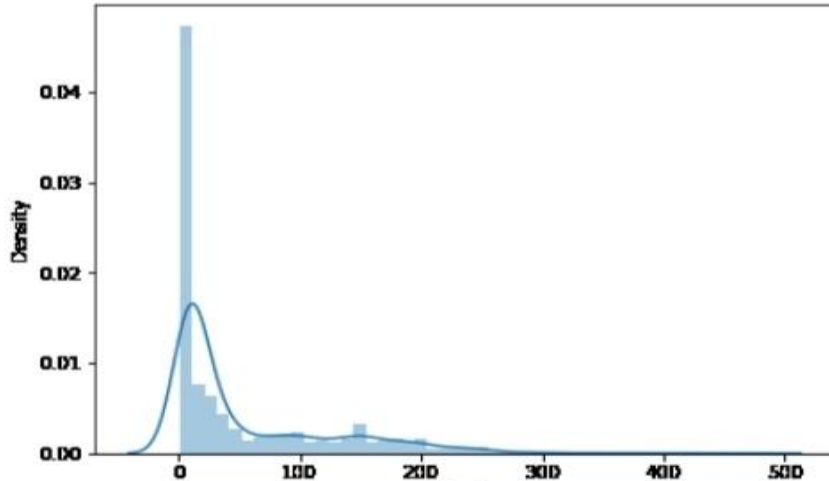
```
plt.subplots(figsize=(15, 5))
```

```
plt.subplot(1, 2, 1)  
sb.distplot(df['Depth'])
```

```
plt.subplot(1, 2, 2)  
sb.boxplot(df['Depth'])
```

```
plt.show()
```

Output:

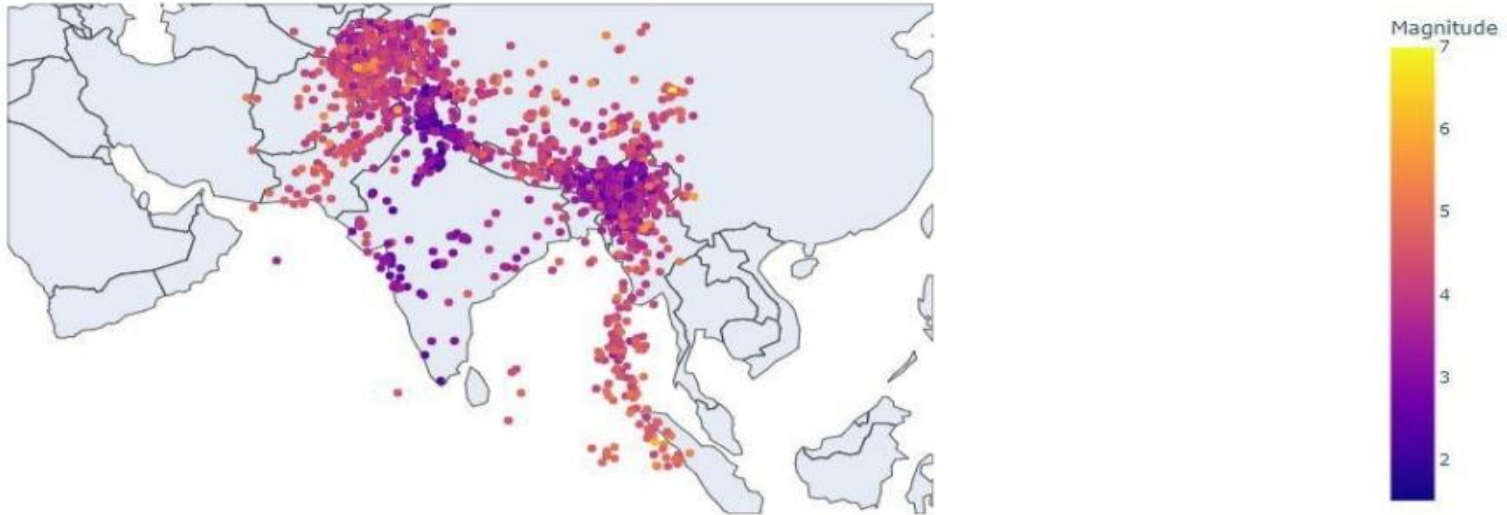


```
import plotly.express as px
import pandas as pd
```

```
fig = px.scatter_geo(df, lat='Latitude',
                    lon='Longitude',
                    color="Magnitude",
                    fitbounds='locations',
                    scope='asia')

fig.show()
```

Output:



Thank you