**SUICIDE ANALYSIS AND PREDICTION**

**Introduction**

The increasing suicides around the world has become an important concern about studying deep about it and try to understand the reasons behind it.

**Background Problem**

As we it’s been always so heartbreaking listening to each time, we listen to a news about committing suicide.

**Technologies and methods**

ARIMA Model and FBProphet models used for predicting suicide deaths around the world.(Kumar and Susan 2020). Covid-19 was a very sensitive topic in recent year. Many people have affected by it and lost their life. The dataset is very similar to what I have chosen for my suicide prediction as well. In my view This is an excellent model to take inspiration from. The paper talks about countries including India and to understand the patten in deaths happened around the world. Time series is definitely helped to make predictions about coming years. ARIMA and FBProphet models are used and for analysis data has been split into training and testing.



Another study was done on predicting birth (Włodarczyk et al. 2021), study was trying to figure out the preterm births. This study used machine learning algorithms like support vector machine(svm), random forest, K-Nearest Neighbor, and Convolutional Neural Network (CNNs).

Another study I can point out was done on predicting mortality of predicting attributable to cancer in Qingdao, China: (Qi et al. 2021). They have also used ARIMA Model for prediction of deaths. ARIMA model is combination of autoregressive model and moving average model.Another study was done on prediction o exchange rate (Airiti . 2012). Artificial Nueral Network and ARIMA are used to predict the model.

SVM has been used Time series analysis, like (Huang et al. 2017) has clearly studied classification problem on Breast cancer dataset. This study also checked for different kernel function that used in the SVM Classifier. The outcome of their shows that for large scale datasets RBF kernel based SVM ensembles based onboosting perform better than the other classifiers. SVM is first introduced by (Cortes and Vapnik 1995) shown that it’s better for two-group classification problems.

PCA-KNN model is used in (2018) for financial time series prediction, we could use output from sliding window as input for the KNN Model. Principal Component Analysis (PCA) is used in the transformation of the data as well. Suicide dataset will have to undergo above methods to achieve efficiency and accuracy in modeling or achieve optimum results. Empirically, my assumptions on the previous studies may vary along my research but still this literature review on previous studies has help me improve my preparations for the suicide research in achieving my project goals.

**References**

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