Crime Prediction Using Machine Learning

Harshal[1], Prashant[2], Nikhil[3],

[1] *Harshal Ananda More,Computer engineering, Sapkal college of engineering, Maharashtra,India*
[2] *Prashant Chhotulal Patil,, Computer engineering, Sapkal college of engineering, Maharashtra,India*
[3] *Nikhil Kashinath Nawale, Computer engineering, Sapkal college of engineering, Maharashtra,India*

ABSTRACT

Crime is one of the biggest and dominating problem in our society and its preventionis an important. task. Daily there are huge numbers of crimes committed frequently. This require keeping track of all the crimes and maintaining a database for same whichmay be used for future reference. The current problem faced are maintaining of proper dataset of crime and analyzing this data to help in predicting and solving crimes in future. The objective of this project is to analyze dataset which consist of numerous crimes and predicting the type of crime which may happen in future depending upon various conditions. In this project, we will be using the technique of machine learning and data science for crime prediction of Chicago crime data set. The crime data is extracted from the official portal of Chicago police. It consists of crime information likelocation description, type of crime, date, time, latitude, longitude. Before training of the model data preprocessing will be done following this feature selection and scaling will be done so that accuracy obtain will be high. The K-Nearest Neighbor (KNN) classification and various other algorithms will be tested for crime prediction and one with better accuracy will be used for training. Visualization of dataset will be done in terms of graphical representation of many cases for example at which time the criminal rates are high or at which month the criminal activities are high. The soul purposeof this project is to give a jest idea of how machine learning can be used by the law enforcement agencies to detect, predict and solve crimes at a much faster rate and thusreduces the crime rate. It not restricted to Chicago, this can be used in other states or countries depending upon the availability of the dataset.

Technical Keywords:

Stock Prediction, Data Analysis, Natural Language Processing, Machine Learning.

1. INTRODUCTION

Crimes are the significant threat to the humankind. There are many crimes that happens regular interval of time. Perhaps it is increasing and spreading at a fast and vast rate.

Crimes happen from small village, town to big cities. Crimes are of different type – robbery, murder, rape, assault, battery, false imprisonment, kidnapping, homicide.

Since crimes are increasing there is a need to solve the cases in a much faster way. The crime activities have been increased at a faster rate and it is the responsibility of police department to control and reduce the crime activities.

Crime prediction and criminal identification are the major problems to the police department as there are tremendous amount of crime data that exist. There is a need of technology through which the case solving could be faster.

1.1 PROJECT SCOPE

Along with the present scope of our project, which is prediction of the crime an individ-ual criminal is likely to commit, we can also predict the estimated time for the crime totake place as a future scope. Along with this, one can try to predict the location of the crime. We will test the accuracy of frequent-itemsets

1.2 AIM AND OBJECTIVE
To predict the crime ratio.
So we take a proper Activity on that condition.

The objectives are as follows:-
To predict the crime.
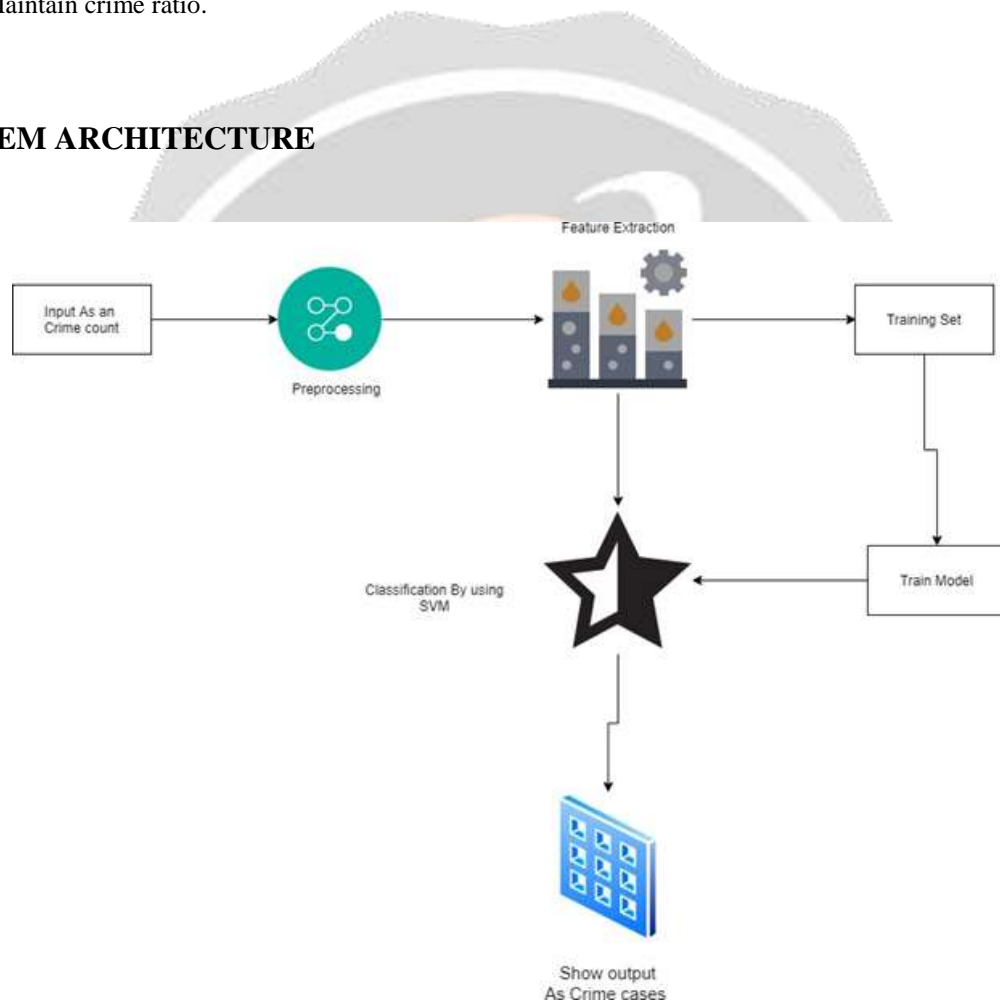Maintain crime ratio.

2. SYSTEM ARCHITECTURE

Fig -2: System Architecture module

2.1 PROBLEM STATEMENT

The crime rate prediction strategies can be applied on historical data available in the police records by examining the data at various angles like reason of crime, frequency of similar kind of crimes at specific location with other parameters to prepare model thecrime prediction

2.2 APPLICATION:

1) To predict crime rate
2) To reduce crime rate
3) Appoint the best officers

3. MODULES:

- Admin

- In this module,the Admin has to log in by using valid user name and password. After login successful he can do some operations such as View All Users and Authorize, View All E-Commerce Website and Authorize,View All Products andReviews,View All Products Early Reviews, View All Keyword Search Details, View All Products Search Ratio, View All Keyword Search Results, View All Product Review Rank Results.

- View and Authorize Users

In this module, the admin can view the list of users who all registered. In this, theadmin can view the user's details such as, user name, email, address and admin authorizes the users.

- View Charts Results

- View All Products Search Ratio,View All Keyword Search Results,View All Prod- uct Review Rank Results.

- Ecommerce User

- In this module, there are n numbers of users are present. User should register be-fore doing any operations. Once user registers, their details will be stored to the database. After registration successful,he has to login by using authorized user name and password Once Login is successful user will do some operations like Add Products, View All Products with reviews, View All Early Product's reviews, View All Purchased Transactions.

- End User

In this module, there are n numbers of users are present. User should register before doing any operations. Once user registers, their details will best or to the database. After registration successful,he has to login by using authorized user name and password. Once Login is successful user will do some operations like Manage Account, Search Products by keyword and Purchase, View Your SearchTransactions, View

4. CONCLUSIONS

With the help of machine learning technology, it has become easy to find out relation and patterns among various data's. The work in this project mainly revolves around predicting the type of crime which may happen if we know the location of where it has occurred.

Using the concept of machine learning we have built a model using training data set that have undergone data cleaning and data transformation.

The model predicts the type of crime with accuracy of 0.789. Data visualization helps in analysis of data set

5. REFERENCES

[1]. Subhash Chand Agrawal ; Rajesh Kumar Tripathi ; Anand Singh Jalal
Human-fall detection from an indoor video surveillance Published in: 2017 8th Interna- tional Conference on Computing, Communication and Networking Technologies (ICC- CNT) Date of Conference: 3-5 July 2017 Date Added to IEEE Xplore: 14 December 2017

[2]. Zhanyuan Huang ; Yang Liu ; Yajun Fang ; Berthold K. P. Horn Video-based Fall Detection for Seniors with Human Pose Estimation Published in: 2018 4th International Conference on Universal Village (UV) Date of Conference: 21-24 Oct. 2018 Date Added to IEEE Xplore: 14 February 2019

[3]. Yie-Tarng Chen ; Yu-Ching Lin ; Wen-Hsien Fang
A hybrid human fall detection scheme Published in: 2010 IEEE International Confer- ence on Image Processing Date of Conference: 26-29 Sept. 2010 Date Added to IEEE Xplore: 03 December 2010

[4]. Priyanka S. Sase ; Smriti H. Bhandari
Human Fall Detection using Depth Videos Published in: 2018 5th International Confer-ence on Signal Processing and Integrated Networks (SPIN) Date of Conference: 22-23 Feb. 2018 Date Added to IEEE Xplore: 27 September 2018

[5]. Shugang Zhang ; Zhen Li ; Zhiqiang Wei ; Shuang Wang
An automatic human fall detection approach using RGBD cameras Published in: 2016 5th International Conference on Computer Science and Network Technology (ICCSNT) Date of Conference: 10-11 Dec. 2016 Date Added to IEEE Xplore: 19 October 2017