

# Crime Data Analysis using ML

Borra Bhanu Lakshmi Prakash Reddy<sup>1</sup>, Akkarapalli Chandu Reddy<sup>2</sup>, Dr.R.Radhika<sup>3</sup>

<sup>1</sup>Student, Dept. Of CSE, SCSVMV (Deemed to be University), Kanchipuram, TamilNadu, India

<sup>2</sup>Student, Dept. Of CSE, SCSVMV (Deemed to be University), Kanchipuram, TamilNadu, India

<sup>3</sup>Assistant Professor, Dept. Of CSE, SCSVMV (Deemed to be University), Kanchipuram, TamilNadu, India

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**Abstract** -The criminal cases in India are increasing rapidly thanks to which number of cases pending also are piling up. This continuous increase within the criminal cases is proving to be difficult to be classified and to be solved. Recognizing the criminal activity patterns of an area is vital so as to stop it from happening. The crime solving agencies can do a better work if they have a good idea of the pattern of criminal activities that are happening in a particular area. This can be done by using machine learning by employing different algorithms to find the patterns of the criminal activities in a particular area. This paper uses crime data set and predicts the kinds of crimes during a particular area which helps in speeding up the classification of criminal cases and proceed accordingly.

**Key Words:** Recognising, criminal activity patterns, crime solving agencies, classification of criminal cases

## 1. INTRODUCTION

At present, the criminal cases that are pending in India are rapidly increasing with the amount of crimes committed are increasing. To unravel a case based upon a specific data there should be a radical investigation and analysis that's to be done internally. With the rise within the amount of crime data that's present in India currently the analysis and deciding of those criminal cases is just too difficult for the officials. Identifying this a serious problem this paper concentrates on creating an answer for the choice making of crime that's committed.

### 1.1 Existing System

Many researchers have gone through this problem regarding the criminal cases being unsolved for a long period. They proposed different crime prediction algorithms. In all these models the accuracy will surely vary counting on the info set and therefore the features or attributes we select during data pre-processing. In Crime prediction done on the Mississippi crime data set where models like rectilinear regression and Decision stump model are used gave a results of 83%, 88% and 67% respectively. Although these accuracies of the predictions may vary accordingly because it is discovered that many machine learning algorithms are implemented on data sets consisting of different places having distinctive features, so predictions are changing in all cases

## 1.2 Proposed System

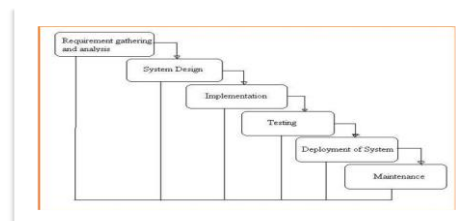
The proposed system is formed on the idea of the research work that's done by browsing various such documentations. Nearly all of the crimes are predicting supported the situation and therefore the sorts of crimes that are occurring in those areas.

## 2. Software Requirements

The software tools that needs to be installed and used are listed here

- Python idle 3.7 version (or)
- Anaconda 3.7 ( or)
- Jupiter (or)
- Google colab

## 2.1 Structure of Project



### Project SDLC

- Project Requisites Accumulating and Analysis
- Application System Design
- Practical Implementation
- Manual Testing of My Application
- Application Deployment of System

## 3. System Design

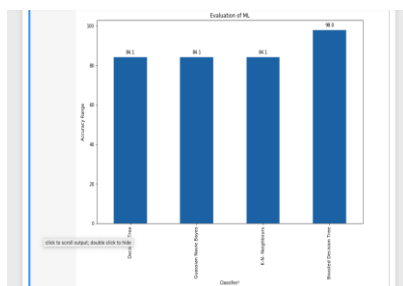
In System Design has divided into three types like GUI Designing, UML Designing with avails in development of project in facile way with different actor and its utilizer case by utilizer case diagram, flow of the project utilizing sequence, Class diagram gives information about different class within the project with methods that need to be uti-

lized within the project if involves our project our UML Will utilizable during this way The third and post import for the project in system design is Data base design where we endeavor to style data base predicated on the amount of modules in our project.

### 3.1 Implementation

The Implementation is Phase where we endeavor to give the practical output of the work done in designing stage and most of Coding in Business logic lay coms into action in this stage its main and crucial part of the project

### 4. Results



### Conclusion

It is clear that basic details of criminal activities during a neighbourhood contain indicators which will be used by machine learning agents to classify a criminal activity given a location and date. The training agent suffers from imbalanced categories of the dataset, it had been able to overcome the matter by oversampling and under-sampling the dataset. This paper presents a criminal offense data prediction by taking the kinds of crimes as input and giving are during which these crimes are committed as output using Colab notebook having python as a core language and python provide inbuilt libraries like Pandas and Numpy through which the work are going to be completed faster and Scikit provides all the processes of the way to use different libraries providing by the python. Results of prediction are different for different algorithms and the accuracy of Random Forest Classifier found to be good with the accuracy of 91.122%.

### References

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### Biographies



Mrs.R.Radhika is Assistant professor in computer science and engineering department in SCSVMV university.



Borra Bhanu Lakshmi Prakash Reddy is pursuing B.E(CSE) in SCSVMV university.



Akkarapalli Chandu Reddy is pursuing B.E(CSE) in SCSVMV university.