# **CRIME PREVENTION USING DATA ANALYTICS AND MACHINE LEARNING**

**INTRODUCTION**

Crime is one of the biggest and dominating problem in our society and its prevention is 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 which may be used for future reference. 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.

Chicago has been in the news a lot in the last few years especially due to the recent up surge of murders resulting from gun violence. 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 like location description, type of crime, date, time, latitude, longitude. Before training of the model data we shall be performing Data Analysis using Pandas and Visualizations libraries to understand tends and patterns of the crimes which are been committed. We shall then use Foursquare APIs to come up with more insights about the locations in which various crimes are getting committed.

This project will be useful for two types of Stakeholders :

1. Chicago Police Departments – Chicago PD will have a more clear picture about the trend of the crimes that are been perpetrated in the city. They might also get some more insights on the type of venues close to which mostly crimes take place. Like Narcotics related crimes can tend to happen near empty places like Parks or Junkyards.
2. Real Estate Buyers – For anyone who is planning to purchase a real estate, they would surely like to view the insights of the solution. This would give them a deep insight on the neighborhoods and the locations which are more prone to crimes been committed. Surely a person planning to open a Jewelry store would not like to open one in a neighborhood where lot of theft occurs. Also they can check out the common venues in a location, which will help them in understanding the competition of the market which they are entering into.