# CHAPTER 1

INTRODUCTION

Chicago is one of the most susceptible areas of crime occurrence because of the prevailing Italian mafia. Crimes in Chicago have always increased over the years. This makes it difficult for the normal people to live peacefully in the vicinity. These crimes follow a pattern and occur based on a presented model. Thus these crimes may be predicted before occurrence and prevented from making it happen. There are four datasets for Criminal analysis which we analyzed to obtain a credible outcome which can be utilized as a yield for the Police Department. There are different types of crimes in the city of Chicago which are classified using Decision trees and further refined, classified using Naive Bayes. This level of classification is required because of the rigorous amount of fine tuning we adopt to obtain the most proximal address of the crime habitats. The Datasets are selected, extracted and inferred using Pandas as a Framework. Entropy serve as the initial classifier since criminals may or may not be arrested and we need to split the dataset for quicker access based on criminals who are not arrested which is achieved through Scipy. After splitting the dataset we refined to find out which crime happens at which location the most, for area based prediction purely based on rules. Next Approach is that a person may not be an existing criminal, in this case the Apriori algorithm serve as the model to find out all the hidden patterns among different types of crimes. Finally a visual authentication is adopted through LabVIEW, since the system uses CCTV as a source of criminal face biometric and the particular application is applicable in case of static and taped images. We used the Social Security Number (SSN) database as a means of result verification. The system is made portable through the implementation of an Android application.

* 1. PROBLEM DEFINITION

This project aims at predicting the future crimes which are going to happen and prevent them from even happening. There are two categories in which a crime may happen. First category is that he/she may be an existing criminal. In this case the rules based prediction model may be implied in order to predict the crime. Second category is that a new person may commit a crime. In this approach various hidden patterns among different types of crimes are found to predict that an unknown person is going to commit a crime. Furthermore, the Pictorial representation of the criminal is analyzed and authenticated since the system analyses and monitors real time CCTV footages.

* 1. MOTIVATION

Crimes are happening daily without any limits. They must be reduced in order to make the world a better place to live. So predicting a criminal before he going to commit a crime would provide a better freedom for the public for a safer place to live in.

**1.3. OBJECTIVE**

* To develop a fully functional system that provides the predicted results of criminals who are going to commit a crime in near future.
* To provide pictorial authentication through real time surveillance for ease of detecting the criminal.
* To provide ANDROID and WEB support.