

Criminal Data Analysis, Verification and Visualization

Himalay Y. Patil¹

Department of Computer Engg.,
K.K.Wagh Institute of Engineering Education and Research
Nashik, India

Kuldipak R. Jagtap³

Department of Computer Engg.,
K.K.Wagh Institute of Engineering Education and Research
Nashik, India

Sanket P. Gaidhani²

Department of Computer Engg.,
K.K.Wagh Institute of Engineering Education and Research
Nashik, India

Prabeen K. Patnaik⁴

Department of Computer Engg.,
K.K.Wagh Institute of Engineering Education and Research
Nashik, India

Abstract: It is very difficult to find a country which has a crime-free society. As long as human beings have feelings they bring round on attempting crimes. So the present society has also packed with various kinds of crimes conversely the criminals in today's society use various advanced technologies and gift crimes in really diplomatic way. Therefore police needs such a crime analysis system to catch criminals and to remain ahead of the in the endless race between the criminals and the law enforcement. The police should used the current technologies to give themselves the much needed perimeter. Police organizations everywhere have been handling a large amount of such information and huge volume of records. There is an urgent need to analyzing the increasing number of crimes so we Designed a system "Criminal Data Analysis, Verification And Visualization too avoid paper work.

Keywords: Phishing, URL-Based, Neuro-Fuzzy

I. INTRODUCTION

In many countries the amount of crime incidents that is reported per day is increasing dramatically. Concerning about Maharashtra (INDIA). The department of police is the major organization of preventing crimes. In general, Maharashtra police stations utilize paper-based information storing systems and they don't employ computer based applications up to a great extent. Due to this utilization of paper-based systems police officers have to spend a lot of time as well as man power to analyze existing crime information and to identify suspects for crime incidents. So the requirement of an efficient way for crime investigation has arisen. Data mining practices is one aspect of crime investigation. For which numerous technique are available. This project makes record searching easy also it provide passport verification in just minute no need to search the file and papers for records and most important it has android app for end user and systems administrator.

A .Crime Types and Security Concerns:

A criminal act can encompass a wide range of activities, from civil infractions such as illegal parking to internationally organized mass murder such as the 9/11 attacks. Law-enforcement agencies across the US compile crime statistics using well-established standards such as the FBI Uniform Crime Reporting System and its successor, the National Incident-Based Reporting System, as well as other criteria defined by jurisdictional needs and requirements. Table 1 lists eight crime categories on which local and federal authorities maintain data, ordered by their increasing degree of harm to the general public. We devised these categories, which include numerous offenses classified by different law-enforcement agencies in various ways, in consultation with a local detective with more than 30 years of experience. Some types of crime, such as traffic violations and arson, primarily concern police at the city, county, and state levels. Other crime types are investigated by local law-enforcement units as well as by national and international agencies. For example, a city police department

sex crimes unit may track local pedophiles and prostitutes, while the FBI and the International Criminal Police Organization focus on transnational trafficking in children and women for sexual exploitation.

B. Motivation:

Increase in the size of crime information that has to be stored to analyze. Problem of identifying techniques that can accurately and efficiently analyze this increasing amount of crime data. Investigation of crime takes longer duration due to complexity issues. All the above challenges motivated to focus on providing solutions that can enhance the process of crime investigation and reducing crime in India. The main aim of this approach consist of developing analytical data mining methods that can systematically address the complex problem related to various form of crime.

Table 1: Crime Types at different law-enforcement levels

Crime type	Local law enforcement	National and international security
Traffic violations	Speeding, reckless driving, causing property damage or personal injury in a collision, driving under the influence of drugs or alcohol, hit-and-run, "road rage"	—
Sex crime	Sexual abuse, rape, sexual assault, child molestation, child pornography, prostitution	Trafficking in women and children for sexual exploitation, including prostitution and pornography
Theft	Robbery, burglary, larceny, motor vehicle theft	Theft of national secrets or weapon information, illicit trafficking in stolen art and vehicles
Fraud	Money laundering, counterfeiting, insurance fraud, corruption and bribery, misappropriation of assets	Transnational money laundering, fraud, and corruption; trafficking in stolen software, music, movies, and other intellectual property
Arson	Intentionally setting fires to damage property, such as a warehouse or apartment building	—
Gang/drug offenses	Possessing, distributing, and selling illegal drugs	Transnational drug trafficking, organized racketeering and extortion, people smuggling
Violent crime	Murder, aggravated assault, armed robbery, forcible rape, hate crime	Terrorism, air and maritime piracy, bombings
Cybercrime	Internet fraud, such as credit card and advance fee fraud, fraudulent Web sites, and illegal online gambling and trading; network intrusion and hacking; virus spreading; cyberpiracy and cyberterrorism; distributing child pornography; identity theft	

II. EXISTING SYSTEM

Criminal Justice System Data Analysis and Visualization Focuses on the analysis and visualization of the data captured And maintained in a proposed integrated criminal justice System database the integrated database combines all Selected data from entities. Throughout Charlottesville/Albemarle criminal justice system including Albemarle-Charlottesville Regional Jail (ACRJ), law Enforcement, courts, public defenders, Commonwealth Attorneys for the City of Charlottesville and Albemarle County, magistrate. Another vital element in effective evidence based decision-making is the data used to drive the analysis.

- Manual Data entry(Paper Work).
- No Centralized Storage
- No Encryption Security
- Difficult Searching

III. RELATED WORK

A. Crime Data Mining Techniques:

Traditional data mining techniques such as association analysis, classification and prediction, cluster analysis, and outlier analysis

identify patterns in structured data. Newer techniques identify patterns from both structured and unstructured data. As with other forms of data mining, crime data mining raises privacy concerns. Nevertheless, researchers have developed various automated data mining techniques for both local law enforcement and national.

security applications. Entity extraction identifies particular patterns from data such as text, images, or audio materials. It has been used to automatically identify persons, addresses, vehicles, and personal characteristics from police narrative reports. In computer forensics, the extraction of software metrics which includes the data structure, program flow, organization and quantity of comments, and use of variable name scan facilitate further investigation by, for example, grouping similar programs written by hackers and tracing their behavior. Entity extraction provides basic information for crime analysis, but its performance depends greatly on the availability of extensive amounts of clean input data. Clustering techniques group data items into classes with similar characteristics to maximize or minimize intra class similarity for example, to identify suspects who conduct crimes in similar ways or distinguish among groups belonging to different gangs. These techniques do not have a set of predefined classes for assigning items. Some researchers use the statistics-based concept space algorithm to automatically associate different objects such as persons, organizations, and vehicles in crime records. Using link analysis techniques to identify similar transactions, the Financial Crimes Enforcement Network AI System exploits Bank Secrecy Act data to support the detection and analysis of money laundering and other financial crimes. Clustering crime incidents can automate a major part of crime analysis but is limited by the high computational intensity typically required. Association rule mining discovers frequently occurring item sets in a database and presents the patterns as rules. This technique has been applied in network intrusion detection to derive association rules from users' interaction history. Investigators also can apply this technique to network intruders' profiles to help detect potential future network attacks.

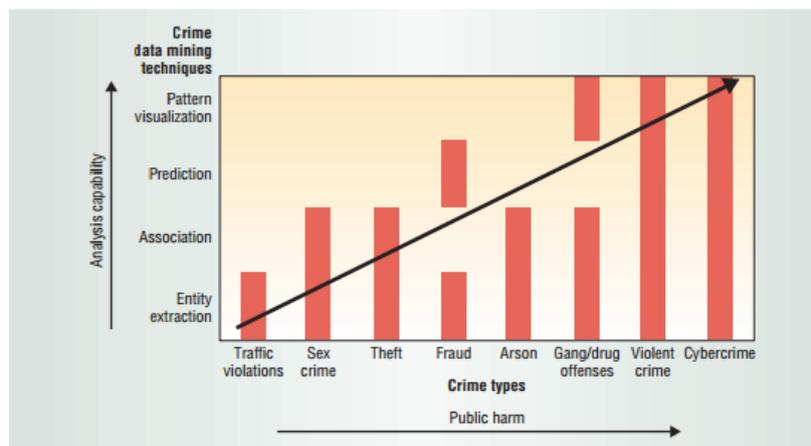


Fig. 1. Crime data mining framework. The framework identifies relationships between techniques applied in criminal and intelligence analysis at the local, national, and international levels.

III. PRAPOSED SYSTEM

The purpose of this paper is to develop an android application for crime area detection and store criminal records. It provides an application for the user that would provide an alternate path for the users passing by crime area. It allows user to report incidents and get it verified by the police officials. It will consist of an application for police officials which can perform database operations on criminal record and allows efficient retrieval of required information from the centralized database present on Cloud. The application targets general public and police officials for managing the incidents and crime without consuming much time. This proposed system will be divided into three major modules.

A. Police Application

This module will be leading to the development of police android application which would work as follows. First and foremost, the police needs to login with the username and the password provided to him, as this application is not publicly available for the general users. After logging into the application, police will be provided with the features like reporting incidents (crimes and incidents causing traffic

jam), view user reported incidents. After the verification of the incident, the database will be updated and the notification will be broadcasted to all the users who will be using this application. Police will be given privilege to do the criminal database manipulations.

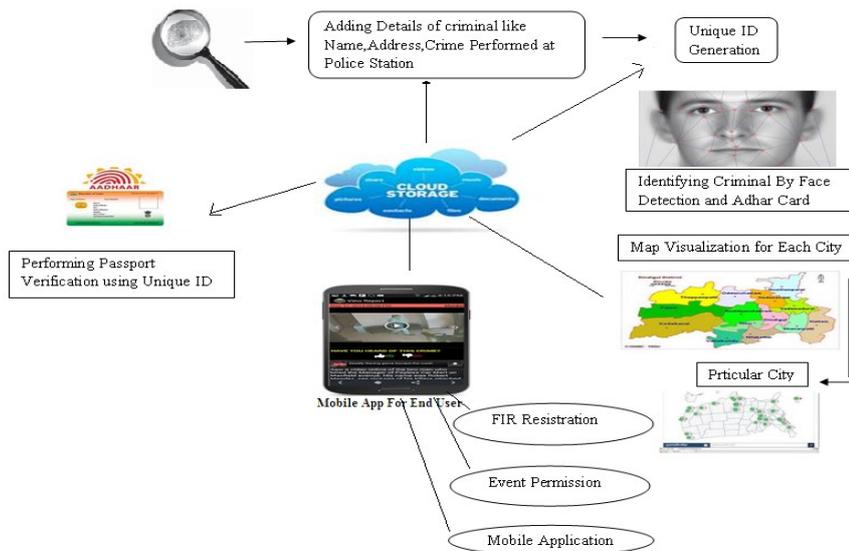


Fig.2: Criminal Data Analysis Verification and Visualization

CONCLUSION AND FUTURE WORK

This system presents a methodology of recognizing a criminal record by using existing evidences in situations where any witness or forensic clues are not present. The system uses an unambiguous clustering mechanism to fragment crime data into subsets, or clusters based on the available evidences and classification techniques has used to recognize most possible suspect/ suspects for crime incidents. Data mining supports enhanced decision making and analysis, and is a powerful tool that can be used to address the large volume of crime information.

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