

Digitization of Police System Using GPS and Deep Learning

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Abstract- Now a day's mobile and internet are integral parts of our lives. These technologies have made our lives fast and easy so, we are trying to make an android application that will make the police departments job easier, faster and more organised. We are developing digitization of police system using GPS and data mining techniques in android that will help the police department to work efficiently and flexibly. We are developing android application where in the users can lodge a complaint of crime and police will know that where the crime has occurred through the users GPS location due to this the police can overcome communication problem, verification issues, collection and storage of crime evidences and details. This will ease the task of lodging a complaint and can reduce the time required for the police to respond to received complaint.

Keywords- Digitization, Crime Detection, Crime Reporting, Police.

I. INTRODUCTION

This system has been proposed keeping in mind the difficulties that people face during registering complaint at any police station. First of all, the entire manual process is time consuming as the complainant has to physically go to the police station numerous times. The same also consumes a whole lot of money and energy. Other disadvantageous factors include, Fear of getting harmed from people against whom FIR is filed, Lodging FIR against highly reputed person is sometimes difficult task. By allowing citizens to lodge their complaints directly, this system circumvents police officers who are often reluctant to register FIRs, particularly in kidnapping and ransom cases. Potentially, this could be an effective tool in combating the endemic corruption and pressure at the *thanalevel*.

II. LITERATURE SURVEY

This paper includes several pieces of key literature in area of android application related to crime area detection. *E-Police System- FIR Registration and Tracking through Android Application* [1] proposes an android application for general users to register a FIR. During registering the

complaint the IMEI number of phone is retrieved by application and stored in database. Police can view the registered complaints on their side of application. The cases are assigned to the officers. They can make updates and provide details of the progress on a particular case. The user who has registered a complaint can view the status of their complaint through the application. Technologies used are android, Eclipse, server.

In *Crime Area Detection and Criminal Data Record* [2] a system is proposed that generates 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. Technologies used here are cloud, android, SHA-1 algorithm.

Data Mining Based Crime Investigation Systems: Taxonomy and Relevance. [3] This paper deals with the study of data mining based systems for analyzing crime information and thus automates the crime investigation procedure of the police officers. The majority of these frameworks utilize a blend of data mining methods such as clustering and classification for the effective investigation of the criminal acts. Technologies used are java, .NET, database administration frameworks, statistical and spatial modeling, and reporting tools, K-means algorithm.

Mining the crime survey to support crime profiling. [4] In this paper, they reported the preprocessing activities that were performed on survey data to allow their use with data mining models. They reported the results of early analysis of the survey data using decision trees and the user interpretation of those results. Technologies used are Python, Java and Pandas

Mobile Web Application with Shortest Path Finder [5] proposes Travelers Sidekick, a mobile GPS application with shortest path finder, was developed as a mobile web application using HTML5, CSS, and jQuery in .NET

environment integrated with SQL database and Google Map service. A newly developed Two Stage Divide and Conquer (TSDC) algorithm was utilized to determine the shortest path. Experimental results were presented and future enhancement was discussed.

Position Detection and Tracking System. [6] This system includes a mobile client, a repository, a web client and a map service. The mobile client is used to find location and send a Popup SMS to user when his/her friends or family members come around the user area of direction. This location information can be sent to the server and the same information can be managed and viewed using the web client by other users. Technologies used are J2ME API, GPS.

A Usable and Secure Crime Reporting System for Technology Resource Constrained Contexts. [7]: In this paper, they presented a system (Cry-Help App) developed to enable residents of a university community situated in technology resource constrained environment to facilitate secure and covert crime reporting. The system was developed on the basis of user centric iterative approach. Deployment and evaluation results of their prototype system demonstrate that overall the system scored a 77.06 usability rating with a standard deviation of 0.05 for contributing scores on System Use, Information Quality and Interface Quality. This is indicative of the fact that users found the system to be very usable. Technologies used are android, SDK storage and output.

III. PROPOSED SYSTEM

To develop an android application through which user can lodge complaint and police can view those complaints on map with the severities marked for each complaint.

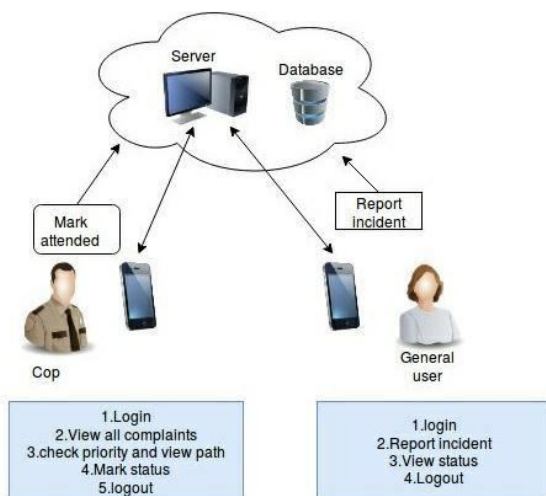


Fig 1.Overview of system.

Victim module

1. Victim can register its complaint via the android application. With his complaint his current location will also be sent to the Server.
2. The severity of the victim’s complaint is automatically categorized based on the keywords present in the complaint.

Police Module

1. When logged in, the application will show all the complaints received from the various locations on the map.
2. The complaints will be shown with their numbers marked according to their priority which will be set based on the severity.
3. The application will also show the path to reach that complaint’s origination location as while registering Crime location of crime will also be taken from victim.
4. If suppose two person report about the same crime then it is avoided and only one complaint is registered.

IV. SEVERITY CHECKING

This function prioritizes the complaints viewed on the police module. According to severity of the crime, the complaints are prioritized. A Data Dictionary is maintained. Dictionary with keywords in it for matching training data set and input data set. Keywords from registered complaints are matched with data set and priorities are set. We are using Naïve Bayes Algorithm for prioritized the crime and assign severity accordingly.

❖ **NAÏVE BAYES :-**

Naive Bayes classifiers are linear classifiers that are known for being simple yet very efficient. The probabilistic model of naive Bayes classifiers is based on Bayes’ theorem, and the adjective *naive* comes from the assumption that the features in a dataset are mutually independent. Naive Bayes classifiers tend to perform very well under this unrealistic assumption. Especially for small sample sizes, naive Bayes classifiers can outperform the more powerful alternatives.

[7] A.B. Sakpere, Anne V.D.M Kayem,ThaboNdlovu," 2015.

Being relatively robust, easy to implement, fast, and accurate, naive Bayes classifiers are used in many different fields. Some examples include the diagnosis of diseases and making decisions about treatment processes , the classification of RNA sequences in taxonomic studies, and spam filtering in e-mail clients.

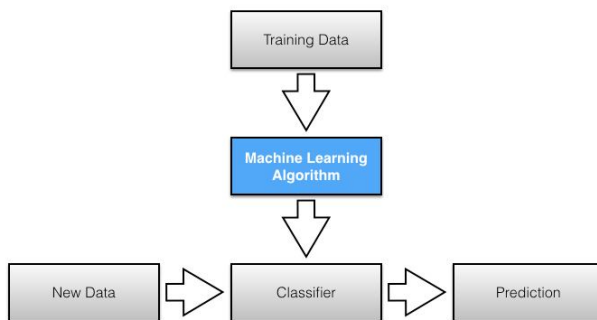


Fig 2.Overview of Module

V. CONCLUSION

Indian Police System has remained devoid of web technology, with most works being carried out on a pen and paper basis. This traditional method is prone to delays and inefficiency. This paper proposes to simplify and speed up the process of FIR registration and tracking. With the advancement and incorporation of internet and web technology into the Indian Police System, it will definitely boost up the proceedings. This paper aims to help the public and the police officers alike. The updates about case details are notified directly to the complainant through the application. The ease of access of the android application by the citizens of India will encourage a more judicial and lawful society.

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