ABSTRACT

Hotspot mapping is a popular analytical technique that is used to help identify where to target police and crime reduction resources. In essence, hotspot mapping is used as a basic form of crime prediction, relying on data to identify the areas of high concentrations of crime and where policing and other crime reduction resources should be deployed. A number of different mapping techniques are used for identifying hotspots of crime point mapping thematic mapping of geographic areas (e.g. Census areas), spatial ellipses, grid thematic mapping and Kernel Density Estimation (KDE).

This research develops temporal clustering for crime events and applies spatial clustering for each temporal cluster created to provide crime related hotspots based on space and time and implementing spatial clustering simulation based on analysis of spatial-temporal hotspot for predicting crime activities is achieved using crime data which provides strong aggregation between various crime data attributes and analyzes the time and space relationship with repeat and near-repeat victimization of crime activities.

The Spatial clustering algorithm based on CLIQUE Optimization algorithm to find the exact hotspot in the kernel density estimation map. Spatial data space is divided by hyper-planes which are entertained with axis-paralleled histogram in the CLIQUE Optimization algorithm. A division
of data space relies on the natural distributing character of input data space to improve the accuracy and efficiency of spatial clustering.

As it is known that detecting hotspot is the key for research, the structured crime classification algorithm is proposed and by using it, the Crime Hotspot for burglary can be detected from various classifications of cases and preprocessing the crime events before Crime mapping. The spatial clustering simulation based on analysis of hotspot mapping is proposed and applied to the police record of Chennai city in INDIA. The spatial clustering simulation for crime forecasting of crime events day-to-day analysis, month-wise analysis, year-wise analysis depending on parameter choices, it is proposed to observe and describe several suggestions of police Department, including hotspots of high criminal activity. The simulations results from this simulation and observe, three Suggestions:

- Micro Level Simulations (Short Term Forecasting)
- Me so Level Simulations (Medium Term Forecasting)
- Macro Level Simulations (Long Term Forecasting)

These suggestions may eventually prove useful for developing better methods of crime forecasting, prevention and also to allow the police and other security agencies to more effectively controlled resource allocation, deployment of the Police force, find the boundary of the areas and to decide on locations for new police stations.