Abstract

Serial crimes are the problems which are mostly committed by minority of offenders. The law enforcement people are forced to find out the serial crime which is considered as complex task. In order to find out the serial crimes, one needs to investigate the large number of crimes which are unlinked with each other. These problem need to be analyzed in different ways to find out the link that exist among each crimes which happened in various locations. In the previous work, cut clustering algorithm were used to cluster the similar type of crime happened in various locations. However the existing work lacks from the number of labeled classes used for clustering which will limit the number of data points to be used. Also the cut clustering algorithm used in the existing research leads to be more complex that does not specify the characteristics of the sub graphs that are created hence it leads to the complexity of deciding a node to be added or deleted. To overcome these problems, in our work majority weighted minority over sampling technique is used to handle class imbalance problem and the dynamic cut clustering is introduced which overcomes the limitation of graph cut clustering algorithm. In this work Quantum Geographic Information System (QGIS) tool is used to visualize, navigate,
GIS based Serial Crime Analysis using Data Mining Techniques

manipulate, and analyze geographic crime datasets.

References


**Index Terms**

Computer Science  
Information Sciences

**Keywords**

Geographic Information System (GIS), Serial Crime, Dynamic Cut Clustering.