

## **Modeling of vehicle trajectory clustering based on lcss for traffic pattern extraction**

### **ABSTRACT**

The emerging of the intelligent transportation system especially in the research area of traffic surveillance and solving traffic congestions, become notably crucial for traffic operators in the aim of achieving efficient vehicle flow. However, behavioural manoeuvres that describe the pattern of vehicles movements and change of the vehicle flow are not sufficiently modeled based on the conventional inductive-loop traffic sensors. These behavioural manoeuvres are useful for interpreting the indepth study of traffic pattern in a traffic network. Hence, with the advancement of the available vehicle tracking system, vehicle trajectory dataset is selected as suitable candidate input for the traffic pattern extraction. The implementation of k-means and fuzzy c-means (FCM) clustering algorithm for vehicle flow analyzing task is served as focus in this paper. Similarity function based on Longest Common Subsequence (LCSS) is implemented to measure the similarity among the trajectories before clustering is performed. Rand Index (RI) is computed to evaluate the clustering performance of two sets trajectories with two different traffic scenes by comparing the simulated clustering result with the ground-truth result.