

## **Traffic signal optimization using Cultural algorithm**

### **ABSTRACT**

Traffic congestion is one of the major issues in most cities. Over time, traffic congestion is increasing due to the increasing number of road users. The conventional nonadaptive traffic signal control strategy is inadequate to optimize the traffic flow during peak hours. Thus, this paper explores the feasibility of optimizing traffic signal timing using cultural algorithm to minimize the traffic queue length at every intersection within a network. Since the traffic congestion can be propagated from upstream intersection to downstream intersection, the proposed algorithm will consider the traffic condition at neighboring intersections when computing the optimum traffic signal timing. The performance of the proposed algorithm is simulated and compared with the conventional fixed timing system. The results show the proposed cultural algorithm is able to improve the traffic flow by 20 %.