

Smart Traffic Management System Using Internet of Things

Abstract

Traffic management system is considered as one of the Major dimensions of a smart city. With the rapid growth of Population and urban mobility in metropolitan cities, traffic Congestion is often seen on roads. To tackle various issues for Managing traffic on roads and to help authorities in proper Planning, a smart traffic management system using the Internet of Things (IoT) is proposed in this paper. A hybrid approach (combination of centralized and decentralized) is used to optimize Traffic flow on roads and an algorithm is devised to manage Various traffic situations efficiently. For this purpose, the system Takes traffic density as input from a) cameras b) and sensors, then Manages traffic signals. Another algorithm based on Artificial Intelligence is used to predict the traffic density for future to Minimize the traffic congestion. Besides this, RFIDs are also used To prioritize the emergency vehicles such as ambulances and fire Brigade vehicles during a traffic jam. In case of fire on the road, Smoke sensors are also part of this system to detect this situation. To demonstrate the effectiveness of the proposed traffic Management system, a prototype is developed which not only Optimizes the flow of traffic but also connects nearby rescue Departments with a centralized server. Moreover, it also extracts Useful information presented in graphical formats that may help The authorities in future road planning.