Abstract

Vehicular traffic congestion is an increasingly growing problem in this modern world. The increase in vehicles purchased per year in no way reduces the number of vehicles on our roads. There is therefore the need to devise a system to ensure smooth flow of vehicles, especially at intersections. Standard traffic lights, with fixed intervals between light changes, have helped reduce this issue over the years. However, the increase in the number of vehicles on roads, especially during rush hours, has rendered the standard traffic lights incapable of efficiently and effectively reducing traffic jams. In this paper, we present an autonomous vehicle density-based traffic control system. This traffic control system makes use of infrared sensors to determine the number of vehicles from each direction at an intersection and dynamically allocates traffic signal lights to ensure smooth and fair flow of vehicles at an intersection. The control system requires no human inputs and thus eliminates the possibility of human error. The system was designed and simulated using Proteus software.
References

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Index Terms

Computer Science Information Systems

Keywords

Infrared sensor, traffic light, autonomous, density-based, congestion.