

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

JNANA SANGAMA CAMPUS, BELGAVI-590018



**PROJECT REPORT**

On

**“SMART TRAFFIC CONTROL FOR EMERGENCY  
VEHICLES”**

Submitted by

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**In partial fulfilment of the requirements for the degree of**

**BACHELOR OF ENGINEERING**

**In**

**INFORMATION SCIENCE AND ENGINEERING**

**Under the Guidance of**

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**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING  
ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Moodbidri-574225, Karnataka**

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**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**  
**CERTIFICATE**

*Certified that the project work entitled "SMART TRAFFIC CONTROL FOR EMERGENCY VEHICLES" is a bonafide work carried out by*

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in partial fulfilment for the award of BACHELOR OF ENGINEERING in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2017-2018. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

  
28/4/18

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## ABSTRACT

In developing countries like India population is significantly growing. As the population grows, the number of vehicles on the roads are also exponentially increasing, which results in increase in road accidents and traffic jams. Specifically, when an emergency vehicle such as Ambulance or Fire engine gets stuck in traffic jam, saving the human life becomes difficult. Under such circumstances, a promising system which can clear the traffic congestions especially in peak hours and thereby providing a safe path for emergency vehicles is very much essential. In the existing literature, less focus is given towards the problem of providing a clear path for emergency vehicles during traffic congestions.

To solve these issues, an Ultrasonic sensor and RFID-based system is proposed, which manages and regulates the traffic signals at junctions when the emergency vehicle approaches, by allowing the easy passage out of the traffic congestions. The proposed framework is modelled by means of an experimental setup using Arduino and LED's which simulates a real time traffic scenario. Ultrasonic sensors are installed on the roads to manage the traffic efficiently. The simulation results illustrate the better performance of the proposed framework in terms of detection as well as management of emergency vehicle by providing passage out of traffic congestions during peak hours.

The ultrasonic sensor which is placed at a threshold distance from the junction calculates the vehicles density. This density is used by Arduino to regulate the traffic. The RFID receiver is also placed at a threshold distance from the junction. The RFID receiver informs the Arduino about the arrival of the emergency vehicle. The Arduino then takes the required measures to allow a safety passage for the emergency vehicle.