

SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY

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LITERATURE SURVEY ON

*Advances in smart roads
for future smart cities*

*Smart Real-Time Tracking
and Controlling System
During Health Emergency
for Improved Road Safety*

*IoT Based Smart Road
Safety and Vehicle
Accident Prevention
System*

*An IoT Architecture for
Assessing Road Safety in
Smart Cities*

*Wireless digital traffic
signs of the future*

LITERATURE SURVEY 1

NAME OF THE PAPER:

Advances in smart roads for future smart cities

AUTHOR:

Chai K. Toh¹, Julio A. Sanguesa, Juan C. Cano and Francisco J. Martinez

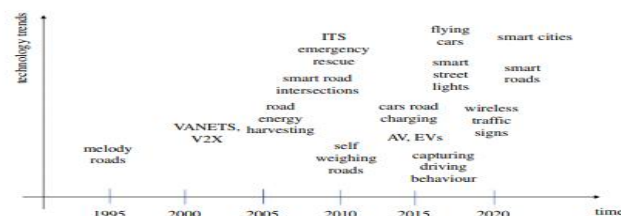
NAME OF THE CONFERENCE / JOURNAL:

Electrical Engineering, software, Environmental Engineering, : 15 July 2019

OBJECTIVE:

The key technologies behind smart cities are connectivity, cloud computing, data analytics, sensors, Internet of Things and artificial intelligence. Smart cities cover a wide range of applications and used cases. The three commonly used cases highlighted by many countries are (i) transport, (ii) health, and (iii) living. In this paper, we shall focus solely on transport for smart cities. In particular, we shall examine the advances over the past decades on smart roads globally.

Transportation forms the arteries for modern society and economy. The transportation of goods and people has enabled business success and created new cities. While transportation is commonly viewed as a classical civil and structural engineering problem, it is increasingly becoming digitally enabled with information communication technologies. Current traffic problems facing our society today include: (i) traffic jams, (ii) accidents, (iii) pollution, (iv) fuel cost, (v) fuel scarcity, (vi) high insurance costs, and (vii) others. The increase in population in cities and in the number of cars, bicycles, motorbikes and road users have added to the risk of accidents, traffic congestion, etc. Hence, there are several advances made over the past decades to address some of these problems.



LITERATURE SURVEY 2

NAME OF THE PAPER:

Smart Real-Time Tracking and Controlling System During Health Emergency for Improved Road Safety

AUTHOR:

Nithish M, Thippesha J, Yathishgowda H R, Nagaraju J N

NAME OF THE CONFERENCE / JOURNAL:

Bangalore Institute of Technology Karnataka, Volume 10, Issue 06 (June 2021)

OBJECTIVE:

Currently, in the period of autonomous era, every sector is involving in the adoption of systems that are spontaneous and efficient. In the sector of autonomous vehicles, safety and health of the people who are seated inside the vehicle are majorly concerned. But, the dream of complete autonomous vehicle is far. The automobile industry focuses more on surviving the accidents by making use of available tools and technologies. One such idea is discussed in this paper, which can improve the road safety by establishing better connectivity between the emergency departments and the vehicle. Under the on-road emergency condition, the proposed methodology mainly deals. In order to accomplish the abovementioned tasks, it requires the use of sensors (Ultrasonic, Infrared and passive infrared), communication module (GPRS/GSM) operated by main (Raspberry pi) and sub control-units (Arduino), where the main control unit supervises sub control unit and the sub control unit performs the specified tasks, as defined by the main control unit. The proposed system is developed and analyzed for a prototype car, which will be discussed further.

LITERATURE SURVEY 3

NAME OF THE PAPER:

IoT Based Smart Road Safety and Vehicle Accident Prevention System

AUTHOR:

Kailas Shinde, Pranjal Shinde, Shivani Valhvanka , Swapnil Narkhede

NAME OF THE CONFERENCE / JOURNAL:

*Bhivrabai Sawant Institute of Technology And Research,
Wagholi, Pune. 2018 Fourth International Conference on Computing
Communication Control and Automation (ICCUBEA)*

OBJECTIVE:

Within the upgrading countries accident is that the major reason for death. If we tend to remark dangerous roads within the world then all of them area unit mountain roads and curve roads. The intensity of the deaths area unit additional in incurved roads. Within the mountain roads there'll be slim roads with tight curves. In such forms of things the driving force of a vehicle cannot see vehicles coming back from alternative aspect. As a result of this downside thousands of individuals lose their lives every year. Whereas we tend to area unit talking regarding mountain roads here alternative aspect can be cause a drop-off. The answer for this downside is alerting driver regarding the vehicle coming back from alternative aspect. One among the answer is planned during this paper. We will alert driver by inserting inaudible sensing element in one aspect of the road before the curve and keeping junction rectifier light-weight alternative aspect of the curve, so if vehicle comes from one finish of the curve sensing element can sense the vehicle and junction rectifier light-weight glows at the other aspect as Red. By gazing the Red junction rectifier light-weight driver will become alert and might prevent the speed of the vehicle. And still if associate accident happens we will save the lifetime of victim by giving medical help like a shot. This will increase the survival probabilities of victim.

LITERATURE SURVEY 4

NAME OF THE PAPER:

An IoT Architecture for Assessing Road Safety in Smart Cities

AUTHOR:

Abd-Elhamid M. Taha

NAME OF THE CONFERENCE / JOURNAL:

- *Electrical Engineering, Alfaisal University, Riyadh, Saudi Arabia,*
November 2018

OBJECTIVE:

The Safe System (SS) approach to road safety emphasizes safety-by-design through ensuring safe vehicles, road networks, and road users. With a strong motivation from the World Health Organization (WHO), this approach is increasingly adopted worldwide. Considerations in SS, however, are made for the medium-to-long term. Our interest in this work is to complement the approach with a short-to-medium term dynamic assessment of road safety. Toward this end, we introduce a novel, cost-effective Internet of Things (IoT) architecture that facilitates the realization of a robust and dynamic computational core in assessing the safety of a road network and its elements. In doing so, we introduce a new, meaningful, and scalable metric for assessing road safety. We also showcase the use of machine learning in the design of the metric computation core through a novel application of Hidden Markov Models (HMMs). Finally, the impact of the proposed architecture is demonstrated through an application to safety-based route planning

LITERATURE SURVEY 5

NAME OF THE PAPER:

Wireless digital traffic signs of the future

AUTHOR:

Chai K. Toh¹, Juan-Carlos Cano², Carlos Fernandez-Laguia², Pietro Manzoni², Carlos T. Calafate²

NAME OF THE CONFERENCE / JOURNAL:

Technical University of Valencia, Valencia City, Spain, 7th September 2018

OBJECTIVE:

Traffic signs have come a long way since the first automobile was invented. They have long served the purpose of warning and guiding drivers and also enforcing the traffic laws governing speed, parking, turns, and stopping. In this study, the authors discuss the issues and challenges facing current traffic signs, and how it will evolve into a next-generation traffic sign architecture using advanced wireless communications technologies. With technological advances in the areas of wireless communications and embedded electronics and software, we foresee that, in the future, digital traffic sign posts will be capable of transmitting the traffic sign information wirelessly to road users, and this will transform our roads into intelligent roads, where signs will appear promptly and automatically on in-vehicle displays to alert the driver. There is no longer the need to watch out for traffic signs since the detection will be automatic and performed wirelessly. This transformation will lessen burden on the drivers, so that they can then focus more on the traffic ahead while driving. Also, this evolution into wireless digital sign posts will fit well with the vision of future smart cities, where smart transportation technologies will be present to transform how we drive and commute, yielding greater safety, ease, and assistance to drivers.