Signs with Smart Connectivity for Better Road Safety

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LITERATURE SURVEY

TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
IOT Based Smart Traffic Management System	❖ Rachana K P ❖ Aravind R ❖ Ranjitha M Spoorthi Jwanita Soumya	❖ Internet of Things ❖ Digital Image Processing ❖ MATLAB	❖ IOT based traffic management Easy penalize traffic violators and help officials identify unauthorized drivers. ❖ Reroute the ambulance to the low congestion roads tohelp get medical care at the earliest.	❖ Additional security measures are required ❖ Require High-Tech network infrastructure	2021

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IOT Road Safety	Sowparnika Manakkattil	❖ IoT ❖ Arduino Code ❖ Node MCU controller ❖ Blynk app .	❖ Alert the driver about the speed limits and reduce the speed of the vehicles in sensitive public zones without any interference of the drivers. ❖ Abnormal information is passed to the vehicles which entering the same zone to take diversion to avoid traffic congestion	❖ The system takes more time because of short range communication ❖ No vision system ❖ Doesn’t provide solution during network unavailability	2020

LITERATURE SURVEY

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Reliable Smart Road Signs	Muhammed O. Sayin, Chung-Wei Lin, Eunsuk Kang, Shinichi Shiraishi, and Tamer Basar.	❖Machine learning-to recognize the surroundings and can base its strategic decisions on the information learnt. ❖Dedicated short range communication (DSRC) radios ❖Game Theoretical Approaches	❖ Road-sign classification in adversarial environments ❖ The detection mechanism involves multiple performance metrics ❖ The cost associated with adversary induced decoding error or failure, the false alarm cost, and the ease of a deceptive perturbation	❖ Need state-of-the-art vision-based roadsign recognition algorithms for better reliability ❖ Relaxation to attacker's algorithm under ❖ Stackelberg equilibrium leads to trigger of false alarm.	2019

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IoT traffic prediction using multi-step ahead prediction with neural network	Ali R. Abdellah, Omar Abdul Kareem Mahmood, Alexander Paramonov and Andrey Koucheryavy	❖ Digital Speed meter Boards ❖ Artificial neural networks ❖ Traffic prediction ❖ A re-routing algorithm - to deviate ambulances to low congestion position based on network of sensors and vehicles	❖ dynamic handling of traffic signals basedon traffic density. ❖ Provides a real-time dashboard to monitor the traffic updates ❖ Prevent the loss of human life who is need to reach hospital at time	❖ Software based solution ❖ Require training ❖ Accuracy is not 100%	2019

LITERATURE SURVEY

TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Smart Traffic Management System for Traffic Control using Automated Mechanical and Electronic Devices	Mamata Rath	❖ Vehicular Ad-hoc Networks (VANETs) ❖ Ns2 simulator ❖ Automating vehicles, mobile agent and big data analytic tools ❖ Dynamic Mobile Agent	❖ Prevention of accidents, crime, driver flexibility and security of the passengers. ❖ Pmproved rate of congestion control in traffic points	It shows traffic congestion increases, the average waiting time also increases.	2018

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Improving Road Safety with Intelligent Transportation Systems	Kelly Borden, Marc LaBahn, Matt Milliken, Solomon Ortega	❖ ArcGIS to identify hotspots ❖Vehicle Detection System (VDS)- can detect vehicle statistics. ❖Roadside Weather Information Systems (RWIS)- observe both weather and road conditions ❖Closed-Circuit Television (CCTV)- observe traffic conditions.	❖Increase traffic safety ❖avoid accidents caused by weather and congestion. ❖ITS toolbox can be used by DOTs all over the country as a resource for ITS solutions ❖Decreases number of fatalities due to traffic	❖Data on ArcGIS was not sufficient to allow us to identify causes and potential solutions for all hotspots ❖Unsure of the reason of accidents	2017

LITERATURE SURVEY

TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Implementation on Priority Based Signal Management in Traffic System	Shweta N. Pable Prof. Amit Welekar	❖ Road Side Unit (RSU)-monitor the density of the traffic ❖ Traffic Control Unit ❖ Intelligent Traffic system ❖ Vehicular Ad Hoc Network (VANET)	❖ It will receives information transmitted from vehicles, and used this information to schedule the traffic signal ❖ Traffic can be cleared without irregularities and time delay. ❖ Emergency vehicle has special priority.	❖ It is a simulation based solution. ❖ It fails when one lane having heavy traffic but other lane is empty then the vehicles need to wait for signal.	2014

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A VANET Based Intelligent Road Traffic Signalling System	Nazmus S. Nafi and Jamil Y. Khan	❖ Vehicle to Infrastructure (V2I) ❖ single road junction based IRTSS using the VANET architecture ❖ wireless sensor networks (WSNs), ❖ Radio frequency identifiers (RFIDs) ❖ IEEE802.11p	❖ Minimum infrastructure requirements including no road sensors are required to measure the traffic flow ❖ Reduce journey time ❖ A flexible road traffic information and dissemination opportunities over a wide geographical area.	❖ High cost ❖ Infrastructur e installation problems ❖ Simulation based solution	2012