

# 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	<ul style="list-style-type: none"><li>❖ Rachana K P</li><li>❖ Aravind R</li><li>❖ Ranjitha M</li><li>Spoorthi Jwanita Soumya</li></ul>	<ul style="list-style-type: none"><li>❖ Internet of Things</li><li>❖ Digital Image Processing</li><li>❖ MATLAB</li></ul>	<ul style="list-style-type: none"><li>❖ IOT based traffic management Easy penalize traffic violators and help officials identify unauthorized drivers.</li><li>❖ Reroute the ambulance to the low congestion roads to help get medical care at the earliest.</li></ul>	<ul style="list-style-type: none"><li>❖ Additional security measures are required</li><li>❖ Require High-Tech network infrastructure</li></ul>	2021

# LITERATURE SURVEY

TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
IOT Road Safety	Sowparnika Manakkattil	<ul style="list-style-type: none"><li>❖ IoT</li><li>❖ Arduino Code</li><li>❖ Node MCU controller</li><li>❖ Blynk app .</li></ul>	<ul style="list-style-type: none"><li>❖ Alert the driver about the speed limits and reduce the speed of the vehicles in sensitive public zones without any interference of the drivers.</li><li>❖ Abnormal information is passed to the vehicles which entering the same zone to take diversion to avoid traffic congestion</li></ul>	<ul style="list-style-type: none"><li>❖ The system takes more time because of short range communication</li><li>❖ No vision system</li><li>❖ Doesn't provide solution during network unavailability</li></ul>	2020

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TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Reliable Smart Road Signs	Muhammed O. Sayin, Chung-Wei Lin, Eunsuk Kang, Shinichi Shiraishi, and Tamer Basar.	<ul style="list-style-type: none"><li>❖ Machine learning- to recognize the surroundings and can base its strategic decisions on the information learnt.</li><li>❖ Dedicated short range communication (DSRC) radios</li><li>❖ Game Theoretical Approaches</li></ul>	<ul style="list-style-type: none"><li>❖ Road-sign classification in adversarial environments</li><li>❖ The detection mechanism involves multiple performance metrics</li><li>❖ The cost associated with adversary induced decoding error or failure, the false alarm cost, and the ease of a deceptive perturbation</li></ul>	<ul style="list-style-type: none"><li>❖ Need state-of-the-art vision-based roads sign recognition algorithms for better reliability</li><li>❖ Relaxation to attacker's algorithm under</li><li>❖ Stackelberg equilibrium leads to trigger of false alarm.</li></ul>	2019

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TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
IoT traffic prediction using multi-step ahead prediction with neural network	Ali R. Abdellah, Omar Abdul Kareem Mahmood, Alexander Paramonov and Andrey Koucheryavy	<ul style="list-style-type: none"><li>❖ Digital Speed meter Boards</li><li>❖ Artificial neural networks</li><li>❖ Traffic prediction</li><li>❖ A re-routing algorithm - to deviate ambulances to low congestion position based on network of sensors and vehicles</li></ul>	<ul style="list-style-type: none"><li>❖ dynamic handling of traffic signals based on traffic density.</li><li>❖ Provides a real-time dashboard to monitor the traffic updates</li><li>❖ Prevent the loss of human life who is need to reach hospital at time</li></ul>	<ul style="list-style-type: none"><li>❖ Software based solution</li><li>❖ Require training</li><li>❖ Accuracy is not 100%</li></ul>	2019

# LITERATURE SURVEY

TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Smart Traffic Management System for Traffic Control using Automated Mechanical and Electronic Devices	Mamata Rath	<ul style="list-style-type: none"><li>❖ Vehicular Ad-hoc Networks (VANETs)</li><li>❖ Ns2 simulator</li><li>❖ Automating vehicles, mobile agent and big data analytic tools</li><li>❖ Dynamic Mobile Agent</li></ul>	<ul style="list-style-type: none"><li>❖ Prevention of accidents, crime, driver flexibility and security of the passengers.</li><li>❖ Improved rate of congestion control in traffic points</li></ul>	It shows traffic congestion increases, the average waiting time also increases.	2018

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TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Improving Road Safety with Intelligent Transportation Systems	Kelly Borden, Marc LaBahn, Matt Milliken, Solomon Ortega	<ul style="list-style-type: none"><li>❖ ArcGIS to identify hotspots</li><li>❖ Vehicle Detection System (VDS)- can detect vehicle statistics.</li><li>❖ Roadside Weather Information Systems (RWIS)- observe both weather and road conditions</li><li>❖ Closed-Circuit Television (CCTV)- observe traffic conditions.</li></ul>	<ul style="list-style-type: none"><li>❖ Increase traffic safety</li><li>❖ avoid accidents caused by weather and congestion.</li><li>❖ ITS toolbox can be used by DOTs all over the country as a resource for ITS solutions</li><li>❖ Decreases number of fatalities due to traffic</li></ul>	<ul style="list-style-type: none"><li>❖ Data on ArcGIS was not sufficient to allow us to identify causes and potential solutions for all hotspots</li><li>❖ Unsure of the reason of accidents</li></ul>	2017



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TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
Implementation on Priority Based Signal Management in Traffic System	Shweta N. Pable Prof. Amit Welekar	<ul style="list-style-type: none"><li>❖ Road Side Unit (RSU)-monitor the density of the traffic</li><li>❖ Traffic Control Unit</li><li>❖ Intelligent Traffic system</li><li>❖ Vehicular Ad Hoc Network (VANET)</li></ul>	<ul style="list-style-type: none"><li>❖ It will receives information transmitted from vehicles, and used this information to schedule the traffic signal</li><li>❖ Traffic can be cleared without irregularities and time delay.</li><li>❖ Emergency vehicle has special priority.</li></ul>	<ul style="list-style-type: none"><li>❖ It is a simulation based solution.</li><li>❖ It fails when one lane having heavy traffic but other lane is empty then the vehicles need to wait for signal.</li></ul>	2014



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TITLE	AUTHOR	METHODOLOGY	MERITS	DEMERITS	YEAR
A VANET Based Intelligent Road Traffic Signalling System	Nazmus S. Nafi and Jamil Y. Khan	<ul style="list-style-type: none"><li>❖ Vehicle to Infrastructure (V2I)</li><li>❖ single road junction based IRTSS using the VANET architecture</li><li>❖ wireless sensor networks (WSNs),</li><li>❖ Radio frequency identifiers (RFIDs)</li><li>❖ IEEE802.11p</li></ul>	<ul style="list-style-type: none"><li>❖ Minimum infrastructure requirements including no road sensors are required to measure the traffic flow</li><li>❖ Reduce journey time</li><li>❖ A flexible road traffic information and dissemination opportunities over a wide geographical area.</li></ul>	<ul style="list-style-type: none"><li>❖ High cost</li><li>❖ Infrastructure installation problems</li><li>❖ Simulation based solution</li></ul>	2012