# LITERATURE SURVEY ON IOT BASED SIGNS WITH CONNECTIVITY FOR BETTER ROAD SAFETY

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| Date | 1 September 2022 |
| Team ID | PNT2022TMID00923 |
| Project Name | Signs with Smart Connectivity for Better Road Safety |
| Maximum marks | 4 marks |

Sunghee Lee, Ilhong Shin, Namkyung Lee(2018): Development of IoT based Smart Signage Platform

Digital signage is evolving to smart signage which provides personalized service by adaptively changing contents according to the user context. However, previous smart signage services have difficulty to expend their service because it is not easy to connect additional sensing devices. Furthermore, previous smart signage systems only consider single signage for a service. In this paper, we propose IoT based smart signage platform. The proposed platform provides IoT based connectivity between sensors and signage platform for flexible service extension. Also, we suggest IoT based signage connection, status sensing, and controlling. Therefore, our platform can make a service group of signages dynamically and enables signages to collaborate for a service in wide area. To show the performance of proposed platform, we implemented smart nursing home service. The service shows that IoT devices and signages can be connected to the platform dynamically and collaborate together for a service in wide area.

**REFERENCE:**https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8539356&isnumber=8539346

W. H. D. Fernando, S. Sotheeswaran (2021): Automatic road traffic signs detection and recognition using 'You Only Look Once' version 4 (YOLOv4)

This paper presents an approach to detect traffic signs using You Only Look Once version 4 (YOLOv4) model. The traffic sign detection and recognition system (TSDR) play an essential role in the intelligent transportation system (ITS). TSDR can be utilized for driver assistance and, eventually, driverless cars to reduce accidents. When driving an automobile, the driver's attention is usually drawn to the road. On the other hand, most traffic signs are situated on the side

of the road, which may have contributed to the collision. TSDR allows drivers to view traffic sign information without having to divert their attention. Due to the existence of a large background, clutter, fluctuating degrees of illumination, varying sizes of traffic signs, and changing weather conditions, TSDR is an important but difficult process in intelligent transport systems. Many efforts have been made to find answers to the major issues that they face. The objective of this study addresses road traffic sign detection and recognition using a technique that initially detects the bounding box of a traffic sign. Then the detected traffic sign will be recognized for usage in a speeded-up process. Since safe driving necessitates real-time traffic sign detection, the YOLOv4 network was employed in this research. YOLOv4 was evaluated on our dataset, which consisted of manual annotations to identify 43 distinctive traffic signs classes. It was able to achieve an average recognition accuracy of 84.7%. Overall, the work adds by presenting a basic yet effective model for real-time detection and recognition of traffic signs.

**REFERENCE:**https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9568285&isnumber=9568277

Devershi Pallavi Bhatt, Manish Tiwari (2020): Smart traffic sign boards (STSB) for smart cities

Ubiquitous nature of smart cities requires multiple technologies to be implemented in this area. To develop the smart cities in practice, there is huge need of “Smart Traffic Management”. Smart Traffic Management is a system to monitor and control the traffic signals using sensors to regulate the flow of traffic and to avoid the congestion for smooth flow of traffic. Prioritizing the traffic like ambulance, police etc. is also one application comes under smart traffic management. Traffic sign board plays important role to make the traffic in shape and to control and manage the traffic on roads. Many at times the driver misses the sign boards while driving due to various reasons like insufficient light, fog, rain, traffic etc. In this paper, a framework of the Smart Traffic Sign Boards (STSB) is proposed, which can communicate with the system deployed in all the vehicles to make the drivers of those vehicles aware of speed breakers, speed limits, schools, or ‘U’ turn ahead, etc. beforehand, to avoid the mishap due to sudden appearing of such unusual features of the road during the road journey.

**REFERENCE :**https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9124950&isnumber=9124929