Literature review on

Signs with Smart Connectivity for Better Road Safety

by

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1. Yannis, G., Papadimitriou, E., Papantoniou, P., & Voulgari, C. (2013). A statistical analysis of the impact of advertising signs on road safety. International Journal of Injury Control and Safety Promotion, *20*, 111 - 120. This paper investigates the impact of illuminated advertising signs on road accidents. And also discusses how the signs should be placed.

2. R. Jabbar, M. Shinoy, M. Kharbeche, K. Al-Khalifa, M. Krichen and K. Barkaoui, "Urban Traffic Monitoring and Modeling System: An IoT Solution for Enhancing Road Safety," 2019 International Conference on Internet of Things, Embedded Systems and Communications (IINTEC), 2019, pp. 13-18, doi: 10.1109/IINTEC48298.2019.9112118. This article provides information about some iot solutions which have been implemented to enhance road safety.

3. V. Milanes, J. Villagra, J. Godoy, J. Simo, J. Perez and E. Onieva, "An Intelligent V2I-Based Traffic Management System," in *IEEE Transactions on Intelligent Transportation Systems*, vol. 13, no. 1, pp. 49-58, March 2012, doi: 10.1109/TITS.2011.2178839. Measures which have to be taken on solving a traffic cluster is briefly explained by a fuzzy algorithm in this article.

4. S. S. Chavan, R. S. Deshpande and J. G. Rana, "Design of Intelligent Traffic Light Controller Using Embedded System," 2009 Second International Conference on Emerging Trends in Engineering & Technology, 2009, pp. 1086-1091, doi: 10.1109/ICETET.2009.76. This paper provides detailed information on how alternate routes can be assigned during the times of congestion.

5. Watanabe, Y., Sato, K. & Takada, H. DynamicMap 2.0: A Traffic Data Management Platform Leveraging Clouds, Edges and Embedded Systems. *Int. J. ITS Res.* 18, 77–89 (2020). This paper discusses the communication protocols which can be adopted while implementing embedded systems on a congestion rich network. Also provides details about the data transmission via cloud over multiple platforms.

6. R. B. Devi, D. K. Reddy, E. Sravani, G. Srujan, S. Shankar and S. Chakrabartty, "Density based traffic signal system using Arduino Uno," 2017 International Conference on Inventive Computing and Informatics (ICICI),

2017, pp. 426-429, doi: 10.1109/ICICI.2017.8365387. This article briefly explains about the implementation of arduino to control the traffic density in sideways and crosspaths.

7. A. Dubey, M. Lakhani, S. Dave and J. J. Patoliya, "Internet of Things based adaptive traffic management system as a part of Intelligent Transportation System (ITS)," *2017 International Conference on Soft Computing and its Engineering Applications* (icSoftComp), 2017, pp. 1-6, doi: 10.1109/ICSOFTCOMP.2017.8280081. This paper discusses the Data obtained by IOT thus gives the value of traffic congestion in particular lanes, according to which traffic lights are programmed to work. This system also gives idea to drivers to choose the path with less congestion. This system is also useful in emergency and VIP clearance and in traffic surveys. This increases the efficiency of traffic clearance.

8. D. Patel and Y. Rohilla, "Infrared Sensor based Self–Adaptive Traffic Signal System using Arduino Board," 2020 12th International Conference on Computational Intelligence and Communication Networks (CICN), 2020, pp. 175-181, doi: 10.1109/CICN49253.2020.9242560. This paper discusses An autonomous traffic signal system can be an effective measure to alleviate congestion of urban traffic. The system adjusts the traffic signal parameters according to the intensity of vehicles in respective lanes and improves the efficiency of traffic operation on urban road networks.