A Survey of Smart Control of Traffic Light System using Artificial Intelligence

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Abstract: *With a population increase and automobiles in cities, traffic congestion has become one of the most important concerns. Heavy traffic not only adds stress and delay to vehicles, but also rises energy pollution and consumption. Megacities are the most affected, despite the fact that it seems to be present everywhere. Because of this, real-time traffic density calculations are required for improved signal control and efficient traffic management. The traffic controller is one of the key elements affecting traffic flow. As a result, improving traffic management is required to better meet this rising demand. Our suggested system will employ artificial intelligence and image processing to determine traffic density using real-time images from traffic junction cameras. Additionally, it focuses on the algorithm for changing traffic signals based on vehicle density in order to lessen congestion, improve travel times for passengers, and cut emissions.*

Keywords: Image Processing, Traffic Density, Traffic Controller.

REFERENCES

[1]. Chandrasekhar. M, Saikrishna. C, Chakradhar. B, Phaneendra Kumar. P & Sasanka. C " Traffic Control Using Digital Image Processing" by Department of Electronics and Communications Engineering, Students of KL University, Greenfields, Vaddeswaram, Guntur District, A.P, India.

[2]. Chunxiao, Shigeru Shimamoto an Open Traffic Light Control Model for Reducing Vehicles' CO2 Emissions Based on ETC Vehicles by IEEE Transaction on vehicular technology in Jan 2021.

[3]. Habibu Raibu, Hassan Bashir Intelligent Traffic Light System for Green Traffic Management 1st International Conference on Green Engineering for Sustainable Development, IC-GESD 2015 at Bayero University, Kano.

[4]. L.F.P. Oliveira, L.T. Manera, P. D. G.Luz Smart Traffic Light System by Using Artificial Intelligence, Dept of semiconductor, Instrumentation and photonic, University of Campinas, Brazil.

[5]. Ms. Deshna Patil, Ms. Nikita Dhankute, Ms. Shubhangi Gedam, Prof. Ashish Palandurkar Traffic Cop Android Application for Management of Traffic Violations Department of Computer Science and Engineering, Nagpur Institute of Technology Nagpur, Maharashtra, India.

[6]. Jianhua Guo, Ye Kong, Zongzhi Li, Wei Huang, Jinde Cao, Yun Weid Area-wide traffic signal timing optimization under user equilibrium traffic Intelligent Transportation System Research Center, Southeast University, Nanjing, China, Illinois Institute of Technology, IL, USA.

[7]. M. F. M. Sabri, M. H. Husin, W.A.W.Z.Abidin, K.M.Tay, H.M.Basri Traffic control system based on Field Programmable Gate Array International Journal of Advanced Research in Artificial Intelligence, Vol. 1, No. 3, 2012

[8]. Pavan Kumar and Dr. M. Kamala kumara "Adaptive traffic control systems with VANET "Continent Transportation Research Symposium, Ames, Iowa, Iowa State University, August 2005.

[9]. Ekinhan Eriskin "Traffic signal timing at oversaturated intersections was expressed as the elimination pairing system" 10th International Scientific Conference Transbaltica 2017: Transportation and Technology.