

Traffic Sign Identifier

Nikhil Kumar¹, Aman Chauhan², Mrs. Vimmi Malhotra³

Research Scholar, Dronacharya College of Engineering, Gurugram, Haryana, India^{1,2}

Faculty, Dronacharya College of Engineering, Haryana, India³

Abstract: *Traffic sign recognition (TSR) is one of the most important background research topics for enabling autonomous vehicle driving systems. Drivers are exposed to a variety of risks while driving as a result of the increase in the number of vehicles on the road, which may result in accidents. Every year, a large number of accidents occur all around the world. The driver's failure to interpret all of the visual information available while driving is the primary cause of these incidents. This challenge get more difficult to meeting a city like environment where multiple traffic signs, ads, parking vehicles, pedestrians, and other moving or background objects make the recognition much more difficult. While numerous solutions have been published, solutions are tested on autoways, country-side, or at a very low speed. In this paper, we give a short overview on main problems and known strategies to solve these problems, and we give a general solution to tackle real-time issues in urban traffic sign recognition.*

Keywords: Traffic sign recognition

REFERENCES

- [1]. M. Lalonde and Y. Li, "Road sign recognition – survey of the state of the art," Centre de recherche informatique du Montreal, Tech. Rep. CRIM-IIT-95/09-35, 1995.
- [2]. S. Estable, J. Schick, F. Stein, R. Janssen, R. Ott, W. Ritter, and Y.-
- [3]. J. Zheng, "A real-time traffic sign recognition system," in Proc. IEEE Intelligent Vehicles '94 Symposium, 1994, pp. 213–218.
- [4]. V. Rehrmann, R. Lakmann, and L. Priese, "A parallel system for realtime traffic sign recognition," in International Workshop on Advanced Parallel Processing Technologies '95 (APPT), 1995, pp. 72–78.
- [5]. C. Bahlmann, Y. Zhu, V. Ramesh, M. Pellkofer, and T. Koehler, "A system for traffic sign detection, tracking, and recognition using color, shape, and motion information," in Proc. IEEE Intelligent Vehicles 2005 Symposium, 2005, pp. 255–260.
- [6]. H. Ishida, T. Takahashi, I. Ide, Y. Mekada, and H. Murase, "Identification of degraded traffic sign symbols by a generative learning method," in Proc. 18th Int. Conf. Pattern Recognition (ICPR 2006), vol. 1, 2006, pp. 531–534.
- [7]. P. Siegmann, R. J. Lo'pez-Sastre, P. Gil-Jime'nez, S. Lafuente-Arroyo, and
- [8]. S. Maldonado-Basco'n, "Fundamentals in luminance and retroreflectivity measurements of vertical traffic signs using a color digital camera," IEEE Transactions on Instrumentation and Measurement, vol. 57, no. 3, pp. 607–615, 2008.
- [9]. A. Broggi, P. Cerri, P. Medici, P. P. Porta, and G. Ghisio, "Real time road signs recognition," in Proc. IEEE Intelligent Vehicles 2007 Symposium, 2007, pp. 981–986.
- [10]. de la Escalera, J. M. Armignol, and M. Mata, "Traffic sign recognition and analysis for intelligent vehicles," Image and Vision Computing, vol. 21, no. 3, pp. 247–258.
- [11]. X. Gao, K. Hong, P. Passmore, L. Podladchikova, and D. Shaposhnikov, "Colour vision model-based approach for segmentation of traffic signs," EURASIP Journal on Image and Video Processing, vol. 2008, pp. 1–7.
- [12]. U. L. Jau, C. S. Teh, and G. W. Ng, "A comparison of rgb and hsi color segmentation in real-time video images: A preliminary study on road sign detection," in Proc. Int. Symp. Information Technology ITSIM 2008, vol. 4, 2008, pp. 1–6.

- [13]. Y. Aoyagi and T. Asakura, "A study on traffic sign recognition in scene image using genetic algorithms and neural networks," in Proc. IEEE IECON 22nd Int. Industrial Electronics, Control, and Instrumentation Conf., vol. 3, 1996, pp. 1838–1843.
- [14]. T. Warsop and S. Singh, "Distance-invariant sign detection in high- definition video," in Proc. IEEE 9th Int. Cybernetic Intelligent Systems (CIS) Conference, 2010, pp. 1–6.
- [15]. G. Piccioli, E. de Micheli, P. Parodi, and M. Campani, "Robust method for road sign detection and recognition," Image and Vision Computing, vol. 14, no. 3, pp. 209–223.
- [16]. P. Viola and M. J. Jones, "Robust real-time face detection," International Journal of Computer Vision, vol. 57, no. 2, pp. 137–154, 2004.
- [17]. D. G. Lowe, "Distinctive image features from scale-invariant keypoints," International Journame of Computer Vision, vol. 60, no. 2, pp. 91–110, 2004.
- [18]. H. Bay, T. Tuytelaars, and L. van Gool, "Surf: Speeded up robust features," Computer Vision and Image Understanding, vol. 110, no. 3, pp. 346–359, 2008