IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 4, May 2023

Pothole Detection System

Aniket Shivram Dhote¹, Suraj Dilip Sapate², Swapnil Rajendra Sapkal³, Vinayak Dnyaneshwar Narawade⁴, Prof. Prashant Raut⁵

UG Students, Department of Computer Engineering^{1,2,3,4}
Professor, Department of Computer Engineering⁵
Sinhgad Institute of Technology, Lonavala, Maharashtra, India

Abstract: The report presents a pothole detection system that is designed to identify potholes on roads and alert drivers or authorities to their presence. The system uses sensors and data processing algorithms to detect and analyse the road surface conditions. The report provides a literature review of existing pothole detection systems and their advantages and limitations. The methodology used to develop the pothole detection system is described, including the hardware and software used. Results of the system are presented, including its accuracy and effectiveness. The report concludes with recommendations for future research and development of pothole detection systems to improve road safety and maintenance.

Keywords: Image Processing, Image Detection, Convolutional Neural Networks, Deep learning, Yolo.

REFERENCES

- [1]. S. Hegde, H. V. Mekali and G. Varaprasad, "Pothole detection and inter vehicular communication," 2014 IEEE International Conference on Vehicular Electronics and Safety, Hyderabad, India, 2014, pp. 84-87, doi: 10.1109/ICVES.2014.7063729. (references)
- [2]. V. Kaushik and B. S. Kalyan, "Pothole Detection System: A Review of Different Methods Used for Detection," 2022 Second International Conference on Computer Science, Engineering and Applications (ICCSEA), Gunupur, India, 2022, pp. 1-4, doi: 10.1109/ICCSEA54677.2022.9936360.
- [3]. A.Javed et al., "Pothole Detection System Using Region-Based Convolutional Neural Network," 2021 IEEE 4th International Conference on Computer and Communication Engineering Technology (CCET), Beijing, China, 2021, pp. 6-11, doi: 10.1109/CCET52649.2021.9544396. International Journal of Research Publication and Reviews, Vol 3, no 11, pp 2335-2337 November 2022 2338
- [4]. A. Rasyid et al., "Pothole Visual Detection using Machine Learning Method integrated with Internet of Thing Video Streaming Platform," 2019 International Electronics Symposium (IES), Surabaya, Indonesia, 2019, pp. 672-675, doi: 10.1109/ELECSYM.2019.8901626.
- [5]. R. Rastogi, U. Kumar, A. Kashyap, S. Jindal and S. Pahwa, "A Comparative Evaluation of the Deep Learning Algorithms for Pothole Detection," 2020 IEEE 17th India Council International Conference (INDICON), New Delhi, India, 2020, pp. 1-6, doi: 10.1109/INDICON49873.2020.9342558.
- [6]. Z. Hasan, S. N. Shampa, T. R. Shahidi and S. Siddique, "Pothole and Speed Breaker Detection Using Smartphone Cameras and Convolutional Neural Networks," 2020 IEEE Region 10 Symposium (TENSYMP), Dhaka, Bangladesh, 2020, pp. 279-282, doi: 10.1109/TENSYMP50017.2020.9230587.
- [7]. P. Ping, X. Yang and Z. Gao, "A Deep Learning Approach for Street Pothole Detection," 2020 IEEE Sixth International Conference on Big Data Computing Service and Applications (BigDataService), Oxford, UK, 2020, pp. 198-204, doi: 10.1109/BigDataService49289.2020.00039
- [8]. S. Thiruppathiraj, U. Kumar and S. Buchke, "Automatic pothole classification and segmentation using android smartphone sensors and camera images with machine learning techniques," 2020 IEEE REGION 10 CONFERENCE (TENCON), Osaka, Japan, 2020, pp. 1386-1391, doi: 10.1109/TENCON50793.2020.9293883.
- [9]. A. K. M. Jobayer Al Masud, S. T. Sharin, K. F. T. Shawon and Z. Zaman, "Pothole Detection Using Machine Learning Algorithms," 2021 15th International Conference on Signal Processing and Communication Systems (ICSPCS), Sydney, Australia, 2021, pp. 1-5, doi: 10.1109/ICSPCS53099.2021.9660216.

DOI: 10.48175/IJARSCT-9857

ISSN 2581-9429 IJARSCT

IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 4, May 2023

DOI: 10.48175/IJARSCT-9857

