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Vehicle Number Plate Identification using Computer Vision

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Abstract: *Vehicle Number Plate Identification is a widely studied problem, with numerous successful solutions tailored to specific environments due to the variations in number plate features worldwide. Designing a universal solution is challenging since image analysis techniques employed in building these algorithms are not flawless. This research paper introduces an optimized algorithm, implemented in Python with the OpenCV library, specifically designed for vehicle number plates. The algorithm employs edge detection, Feature Detection techniques, and mathematical morphology to accurately locate the plate. Subsequently, the Tesseract OCR engine is utilized to identify the characters present on the detected plate.*

Keywords: Automatic Number Plate, Character Recognition, Character Segmentation, Grace Scale Conversion, OpenCV, Character Extraction, Character Localization, Image Processing

REFERENCES

[1]. Du, S., Ibrahim, M., Shehata, M., and Badawy, W. (2013). "Automatic License Plate Recognition (ALPR): A State-of-the-Art Review." IEEE Transactions on Circuits and Systems for Video Technology.
[2]. Sulaiman, N., Jalani, S. N. H. M., Mustafa, M., and Hawari, K. (2013). "Development of automatic vehicle plate detection system." 2013 IEEE 3rd International Conference on System Engineering and Technology.
[3]. S. Kaur, K. K. Dhillon, and R. S. Chauhan, An Automatic System for Detecting the Vehicle Registration Plate from Video in Foggy and Rainy Environments using Restoration Technique, International Journal of Computer Applications, vol. 97, no. 20, pp. 14-19, Jul. 2014.
[4]. Islam, R., Sharif, K. F., and Biswas, S. (2015). "Automatic vehicle number plate recognition using structured elements". 2015 IEEE Conference on Systems, Process.
[5]. Sarthak Babbar, Saommya Kesarwani, Navroz Dewan, Kartik Shangle and Sanjeev Pate l" A New Approach for Vehicle Number Plate Detection". 11th International Conference on Contemporary Computing (IC3), IEEE 2018
[6]. C. Henry, S. Y. Ahn and S. -W. Lee, "Multinational License Plate Recognition Using Generalized Character Sequence Detection," in IEEE Access, vol. 8, pp. 35185-35199, 2020, doi: 10.1109/ACCESS.2020.2974973.
[7]. F. A. Aiyelabegan, C. C. Emmanuel, S. Thomas, F. A. Imam, H. Haruna Ginsau and F. Onah, "Proposed Automatic Number Plate Recognition System Using Machine Learning," 2022 IEEE Nigeria 4th International Conference on Disruptive Technologies for Sustainable Development (NIGERCON), 2022, pp. 1-5, doi: 10.1109/NIGERCON54645.2022.9803181
[8]. Priyanka Prabhakar, P Anupama, S R Resmi, "Automatic vehicle number plate detection and recognition(IEEE 2020)" Md. Atikuzzaman, MdAsaduzzaman, Md. Zahidul Islam, "Vehicle Number Plate Detection and Categorization Using CNNs(IEEE 2020)"