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Smart License Plate Recognition System

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The system in this paper is designed and implemented for the vehicle license plate detection. Automatic number plate recognition has three major components: vehicle number plate detection, character segmentation and Character Recognition. After taking the image, the quality of the picture should be enhanced. With this enhance image, the first license plate region is located and then K-NN algorithm is used to character recognition after segmentation of the characters. License plate recognition system is useful in proceeding the tickets for car park systems, finding lost vehicles, managing the car parks, identifying the vehicles exceeding the speed limits on highways, etc. License Plate Recognition (LPR) is an image-processing technology, also known as Automatic Number Plate Recognition (ANPR). There are several types of existing number plate recognition systems with different type of methods and algorithms. This paper presents a more efficient and accurate system for recognizing the license plate number. The number plate detection is done by image processing techniques. Number plate extraction is that stage where the vehicle number plate is detected. The detected number plate is pre-processed to remove the noise and then the result is passed to the segmentation part to segment the individual characters from the extracted number plate. Here the KNN algorithm gives a better approach to the character recognition. k-Nearest Neighbor algorithm (or k-NN for short) is a non-parametric method used for classification and regression. In both cases, the input consists of the k closest training examples in the feature space. The proposed system can be used in license plate recognition applications which is efficient and accurate than the existing systems.

Keywords: k nearest neighbor(k-NN), morphological image processing, open CV, optical character recognition(OCR), python