عنوان مقاله:

License Plate Detection and Identifying the Type of Vehicle Plate (Private/Public) Based on CIE Color Model

محل انتشار:

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خلاصه مقاله:

A License Plate Detection (LPD) system is still of considerable interest because it provides numerous applications such as automatic toll collection, traffic surveillance system, automated parking lot, etc. This paper presents a real-time, smart and efficient method for LPD and can find the type of vehicle plate (personal/public) based on template matching and color analysis by the CIE color model. Images are converted from RGB model to CIE model, which is the most accurate color model and can increase the processing speed. Due to the linearity of CIE model, color values could be easily compared. With extracting the yellow and white condition from image, we can create a binary image, and then with template matching, the license plate (LP) region is detected. In many countries like Iran after the year 2005 they have changed their LP to European standard style, some of these LPs can be categorized in two different types. Basically, the color of their plate background is different. White background is for private vehicles and yellow background is for commercial or public vehicles. With extracting background colors of a plate, we can simply identify the type of vehicle. Also we present a fast enhancement algorithm on the extracted image of LP with some filtering and compensating rotation. Advantages of this method are: high-speed process, low response time, ability to setup and run on microprocessors. The experiment performed by program based on aforementioned algorithms indicates that our system based on CIE color model processing is quite quick and accurate under the variety of conditions such as complex scenes, illumination changing, distances and varied weather, etc.

کلمات کلیدی:

License plate detection, CIE model

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