Template Matching for Automatic Number Plate Recognition System with Optical Character Recognition

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Abstract Number plate is a key feature for identifying different vehicles. The automatic number plate recognition (ANPR) system detects characters on plate on the basis of design of characters. Various font faces are used for writing and designing the number plates in India. Recognition of the characters on the number plates is subject of interest. The developed ANPR system mainly focuses on it. In this system, a new template database of English and Hindi font faces has been used for recognition and identifying of characters on number plates. The mostly used fonts are Calibri, Times New Roman and Kruti Dev for the recognition purpose in this system. The optical character recognition techniques have been employed for recognizing number plate. We have used Hindi and English character number plates for testing purpose and also analyzed the environmental conditions for the proposed system. We have found the segmentation and recognition rates around 96 and 98%, respectively, for the sample data images.

Keywords Optical character recognition (OCR) · Filter · Automatic number plate recognition · Morphological operation · Template matching

1 Introduction

Unbalanced traffic creates a lot of problems for us such as accidents, long traffic congestion, difficulties in toll collection finally resulting in delayed traveling hours, increasing pollution levels and increased fuel consumption during peak traveling hours. It is a difficult task for the parking management systems to ease the smooth

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