Automatic License Plate Detection

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Abstract—**This project aims to develop an automatic license plate recognition system using C and/or MATLAB**

Keywords—Image Processing, License Plate Detection, Optical Character Recognition

I. INTRODUCTION

For this project, the challenge of license plate detection from a given image will be taken on. Given an image of a vehicle with a license plate within the image, the program will be able to identify where the license plate is and subsequently identify the text within it. This objective will be reached through concepts taught within the course and demonstrate mastery of software to process images.

II. EXPECTED RESULTS

A. License plate characters in the image are returned by the program

The characters used for the license plate will be returned to the user running the program and will match the characters displayed in the image.

B. A bounding box around the license plate will be returned by the program

The range of pixels that define a bounding box around the license plate will be returned to the user running the program and upon manual inspection of the image, it is verified that the returned pixels are correct.

III. METHODS USED

A. Plate detection

The first section of the project shall employ algorithms to locate the license plate. This may include converting the image to greyscale, applying filters to reduce noise, and performing edge detection to detect the plate. Finally, a bounding box will be drawn around the plate and the rest of the image shall be discarded.

B. Optical Character Recognition

The second section will perform optical character recognition (OCR) to extract and read the characters on the license plate. Feature extraction algorithms will be used to detect each character. The characters will then be combined and returned to the user.

C. Testing

Testing of the project shall be done using a dataset of images containing license plates. A subset of images will be used to test individual algorithms during development, and another set will be used to validate the complete project.