

# Malaysian Vehicle License Plate Recognition Using Deep Learning and Computer Vision



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**Abstract** License plate recognition has become one of the popular topics under deep learning researches. There are many deep learning models and the suitable model for this project chose according to the ability to meet the system operation requirements such as speed, accuracy and precision of the outcome. Therefore, YOLO (You Only Look Once) model was used which is fast in processing the more images and produce the output at a single look. YOLO is an algorithm designed for multi object detection in a single neural network where it only sees once and process to detect object as many as possible in a picture. In this paper, YOLOv3 is use to detect the position of car registration plate. Next, image warping and slicing applied to straighten the image so it will be easy to feed into character recognition process. Then, the PyTesseract will be used to read the characters from the image together with RegEx function to eliminate the weak predictions from the PyTesseract results. The results obtained from this approach achieved 100% accuracy in recognizing vehicle car plate from 5 video collected from Universiti Malaysia Pahang (UMP) main entrance security gate CCTV system.

**Keywords** Car plate recognition · YOLO · PyTesseract · Image warping · RegEx expression

## 1 Introduction

Vehicle registration plate is crucial for official identification purposes for every single vehicle in Malaysia. Malaysian registration plates are displayed at front at rear of all motor vehicles and normally the registration plate numbers are arranged into one-line and two-line for some vehicles. In this technological world, we are currently facing

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