CHAPTER 1
INTRODUCTION

Background

Plate detection and recognition systems have been widely used for various applications in our lives. Some examples are such as security cameras in parking lots, vehicle black boxes, in the traffic camera to identify the vehicles that violates traffic regulations, and many more. Most of those applications are mainly focused on vehicle license plates and gives accurate results. However, its use on chassis plates are very rare compared to license plate applications.

This research will use neural network in order to recognize the characters. And fuzzy edge algorithm will be used to extract the image features. In which the feature images will be processed to obtain its fuzzy map images. The feature image will be segmented manually and then fed into the neural network in order to recognize the characters inside the plate.

The research hopes to be able to find and analyze the difficulties that chassis plate detection has compared to the license plates. The result obtained in this research has an unfortunately, relatively low accuracy, consists of 51% accuracy for every number samples and 44% for alphabet sample images. This shows that several factors has a high contribution to the result of this research, increasing the complexity and later affecting the accuracy of the results. From which we can conclude the additional steps needed to improve the accuracy even further.

Problem Formulation

1. The plate recognition system for vehicle license plates are commonly found, but it is very rare to see one used for chassis plate related purposes.
2. Creating a system that could help in extracting information in chassis plates, especially for old vehicles.
3. Identifying the problems that may be commonly found in detecting chassis plate numbers.
4. Figuring the additional steps that needs to be done in detecting chassis plate numbers

Scope

The scope of this research are as follows:

1. Applying the similar methods of license plate detection and recognition into chassis plates.
2. Why fuzzy edge algorithm is used instead of the normal edge detection?
3. The effectiveness of neural network in recognizing plate numbers
4. What makes chassis plate recognition easier (or more difficult) when compared to the usual license plate recognition system

Objective

The objective of this research is to figure out the problems and difficulties that may be common in chassis plate number detections, and why is it different from the commonly found license plates.