**CHAPTER ONE**

# **INTRODUCTION**

## **1.1 Background of Study**

The population of every country is increasing day by day, the escalating increase of contemporary urban and national road networks over the last three decades emerged the need for efficient monitoring and management of road traffic thus the number of private as well as public vehicles are also increasing with a great deal and it is clear to the whole world that it is forbidden and it is an offense for two or more vehicle to have the same license plate number.

The increase in number of vehicles and change in license plate are also serving reasons for increase in various crimes that are associated with it. Various cases of theft, hit and run, robbery, kidnapping, smuggling, on-road fatalities, etc. remain unsolved because the vehicles involved could not be recognized accurately. Manual Monitoring of vehicles is cumbersome and error prone because of weak and unreliable human memory. Thus, there is a need of a robust mechanism such as an automated vehicle recognition system to handle this task efficiently.

Recently, the need for Web-based License Plate Number identification has increased very significantly. This need is very much motivated given that many security and road traffic applications are based on web based vehicle license plate number identification. This technology is gaining popularity in security and traffic installations since each vehicle is uniquely identified by its number plate.

A web based vehicle license plate identification is a system designed to identify plate number with the vehicle owner and identify each plate number with the particular vehicle.

Much research has already been done for the recognition of Korean, Chinese, European, American and other license plates. This project presents a license plate recognition system as an application of computer vision. Computer vision is a process of using a computer to extract high level information from a digital image. (Mukesh 2009)

The purpose of the project is to develop a vehicle license plate identification system that will identify and recognize Nigeria license plate. The project goal tends to help in vehicle registration and identification, vehicle tracking, identification of registered vehicle which will reduce the rate of car theft. Though, extraction of license plate from vehicle image and classification of extracted features into different classes are difficult problems in web based Vehicle License Plate Identification System. The accuracy of the system depends mainly on the effectiveness of the extracted features and pattern classifier. (Arulogun, 2015)

## **1.2 Statement of the problem**

There are several problems facing Vehicle License Plate Identification (VLPI). These problems have been in existence and are yet to be addresses fully. The following are some of the problems being faced.

1. Time taking for manual Registration
2. Stress
3. Error proximity
4. Accuracy

## **1.3 Aim and Objectives**

The aim of this project is to develop a web based license plate identification and replacing the age old traditional method of identifying Vehicle License Plate.

Objectives of the presented work aims at the following aspects.

1. Develop a structured database for the registered number plate to aid the automatic recognition.
2. Build a system that delivers optimal performance both in terms of speed and accuracy.
3. Reduce the stress encountered during the manual process of identifying vehicle license plate.

## **1.4 Significance of the study**

Vehicle License Plate Identification has been an active area of research due to its various area of applications. There is a clear need for Vehicle License Plate Identification which is to provide fast and accurate method for extraction of Vehicle License Plate from vehicle images and classification of the extracted and segmented number plate.

## **1.5 Scope of the Study**

This work will focus on identification of vehicle license plate using web base and the developed system will be tested using Nigeria Vehicle License Plate.

The system will be designed to identify license plates, supply the information of the vehicle owner and identify the vehicle with its plate number. Input to the system is the number plate digits and the corresponding output are personal information (Name, Address, Phone No, Email), vehicle information ( plate number, chassis number, vehicle identification number), insurances information ( insurance company Name, insurance number, types of insurance, expire date).

## **1.6 Motivation**

License plate identification is the most active research topic in computer vision for humans and vehicles. The aim of this project is to develop a web based identification of vehicle license plate and replacing the age old traditional method of monitoring by human operators. Now a day, the license plate identification has been essential due to the rapidly growing number of cars. The increasing number of automobiles has facilitated human life but it has also lead to various issues of traffic congestions, parking problems, accidents etc. The motivation in doing this is the need to design a traffic surveillance system for vehicle detection, tracking and license plate identification.