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DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT 2021/2022

TITTLE: A SPEED LIMIT VIOLATION DETECTION AND LICENSE PLATE CAPTURE SYSTEM.

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A Final project Report submitted to the Department of Computer Engineering in Partial Fulfillment of the Requirements for the Award of a Bachelor's Degree in Computer Engineering from Busitema University

DECEMBER, 2022

DECLARATION.

I declare that the work in this final year project report is original. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this final year report was previously presented in any university or institution of higher learning.

Name: GAP OENEN NATHAN

Signature: ……..

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APPROVAL

This is to certify that this final year report has been compiled by GAP OENEN NATHAN Registration Number BU/UG/2018/2912 under the supervision and guidance of the University supervisor. It is now ready for submission to the Department of Computer Engineering.

Signature ---------- Date ----------

Name: MR.MATOVU DAVIES

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DEDICATION

I dedicate my project work to my family and many friends. A special feeling of gratitude to my loving parents, Tom Okodel and Getrude Okodel whose words of encouragement and push for tenacity ring in my ears.

ABSTRACT.

This project presents an arrangement to detect reckless driving or over speeding on highways and by design capture the license plates of the violator's vehicle. In the past, many devices have been made but they require human effort. There are no means of control or monitor speed of the vehicles except the use of traffic policemen. Given the huge mileage of driveways, the number of traffic policemen is far from enough to observe and analyze most drivers. The model is advantageous as there will not be any need of traffic policemen and will accurately detect speed rather than maintaining trust in the eye. This project discusses the hardware as well as the software modules involved in the speed detection and license plate capture system. The system requires a microprocessor, a camera for input, and network capabilities to send data. It includes some reflections on the evolution of this methodology and different design decisions and their impact on the system.

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LIST OF ACRONYMS

Acronym	Spelled out
ANPR	Automatic Number plate Recognition
NLP	Natural Language Processing
IR	Infrared
OCR	Optical Character Recognition

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CHAPTER 1 INTRODUCTION

1.1 BACKGROUND

Road transport is most widely used means of transport in the world and involves transportation of goods and personnel in from one place to another on road.

Traffic law violation has been recognized as a major cause for road accidents in most parts of the world with majority occurring in developing countries.

In today's society, traffic management has become a severe problem due to growth of the urbanization, industrialization and population; there has been a tremendous growth in the traffic. With growth in traffic, there is occurrence of a bundle of problems too; these problems include traffic jams, accidents and traffic rule violation at the heavy traffic signals.[1]

With the increase in the number of automobiles, it has become increasingly challenging to track them and almost impossible to identify the owners of these vehicles in case of violation of any traffic law[2]

Due to a huge number of vehicles, modern cities need to establish effectively automatic systems for traffic management and scheduling. One of the most useful systems is the Vehicle License-Plate (VLP) Recognition System which captures images of vehicles and read these plates.[3][4]

Uganda is one of the countries with the highest rate of roads accidents[1]. The major cause is over speeding mainly by public transport vehicles. Attempts to control this include use of radar speed guns which are used by police traffic officers on roads to track over speeding vehicles. It is used in law-enforcement to measure the speed of moving vehicles. However, this is still a challenge because of the insufficient number of police officers and radar speed guns. However, these traffic officers cannot be assembled in all spots of the roads to control the traffic. This has left the lives of very many people using road transport especially public transport at the mercy of irresponsible drivers.

A total of 1,407 accidents were registered in the months of September 2021, and out of these 229 people died and 1,054 people were injured in the whole the whole country. The main cause was speeding and reckless driving.

APPENDIX

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