TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING

Khwopa College Of Engineering
Libali, Bhaktapur
Department of Computer Engineering

A PROPOSAL ON

NEPALI NUMBER PLATE RECOGNITION USING CNN

Submitted in partial fulfillment of the requirements for the degree

BACHELOR OF COMPUTER ENGINEERING

Submitted by

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2021-22

Certificate of Approval

The undersigned certify that the final year project entitled **"Nepali Number plate recognition using CNN"** submitted by Anish Shilpakar, Anjaan Khadka, Sachin Shrestha, Sudip Shrestha to the Department of Computer Engineering in partial fulfillment of requirement for the degree of Bachelor of Engineering in Computer Engineering. The project was carried out under special supervision and within the time frame prescribed by the syllabus.
We found the students to be hardworking, skilled, bona fide and ready to undertake any commercial and industrial work related to their field of study and hence we recommend the award of Bachelor of Computer Engineering degree.

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Er. Dinesh Gothe
(Project Supervisor)

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Abstract

Keywords: *Neural Network, Convolutional Neural Network, Machine Learning, Image Processing, Image Segmentation*

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List of Symbols and Abbreviation

NLP	Natural Language Processing
RNN	Recurrent Neural Network
ARNN	Attention Based Recurrent Neural Network
JS	JavaScript
RegEx	Regular Expressions
JSON	JavaScript Object Notation
KB	Kilo Byte
OOV	Out of Vocab
NELRALEC	Nepali Language Resources and Localization for Education and Communication.
NNC	Nepali National Corpus
POS	Parts of Speech
LSTM	Long Short-Term Memory

Chapter 1

Introduction

1.1 Background

Chapter 2

Literature Review

Automatic Number Plate Recognition system is in state of research and development but in context of Nepal due to lack of proper dataset only small number of researches have been made. Recently Automatic Number Plate Recognition(ANPR) systems have been developed using deep learning techniques like Support Vector Machine(SVM), Convolutional Neural Network(CNN), Deep Neural Network(DNN) e.t.c along with good image processing algorithms for number plate localization and character segmentation.

The paper "Automatic Nepali Number Plate recognition with Support Vector Machines" by Pant et al. [1] used support vector machines for character recognition and achieved overall accuracy of 75%. However due to use of incomplete dataset this system may fail to recognize number plates of all the zones.

Chapter 3

Requirement Analysis

Chapter 4

System (or Project) Design and Architecture

Chapter 5

Methodology

Chapter 6

Expected Outcomes

Bibliography

[1] A. K. Pant, P. K. Gyawali, and S. Acharya, "Automatic nepali number plate recognition with support vector machines," in *Proceedings of the 9th International Conference on Software, Knowledge, Information Management and Applications (SKIMA)*, 2015, pp. 92–99.