A Project Report

On

FRUIT CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK

Submitted to

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM, KARNATAKA- 590014

In partial fulfilment of the completion of Eighth semester

Bachelor of Engineering

in

Information Science and Engineering

By

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2020-21

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CERTIFICATE

This is to certify that the project work entitled **"FRUIT CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK"** has been successfully completed by

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the bonafide students of **Alva's Institute of Engineering and Technology** in **DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2020-21. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirements in respect of Project work prescribed in partial fulfillment of awarding bachelor of Engineering degree.

9/8/21

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ABSTRACT

Agriculture has usually been an essential financial and social region for humans. Therefore, using progressive technology is of essential significance for the agri-meals region. As fruits play a major role in our day to day lives, fruit classification has become the need of the hour especially in wholesale and retail markets.

Automatic fruit classification is a difficult problem because there are so many types of fruits and the large inter-class similarity. Automatic fruit category is a hard hassle due to the fact there are such a lot of forms of end result and the big inter-elegance similarity. This fruit classification technique could assist the human to lessen the effort and time wanted for sorting of end result at supermarkets and gets rid of the want for direct touch with a variety of the farm produce alongside the supply chain. In this, a technique for classification of varieties of a fruit, which is most commonly available in the market primarily based on convolution neural network (CNN) is proposed, by creating a user interface and utilizing IDLE Python platform. The aim is to build an accurate, fast and reliable fruit detection system using machine learning facts. Size and colour appearance is the main source for fruit classification.

For fruit image detection, CNN also showed significantly higher accuracy than a conventional method did. Besides, this approach is also much quicker to deploy for new fruits. We have proposed a fruit classification model, which basically classifies 7 types of fruits. On the basis of convolutional neural network, several research experiments were conducted by considering various parameters, and achieved the highest average classification accuracy of 92%.