A Project Report

On

ASSISTANCE FOR VISUALLY IMPAIRED IN OBJECT DETECTION AND RECOGNITION

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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CERTIFICATE

This is to certify that the project entitled **"Assistance for Visually Impaired In Object Detection and Recognition"** has been successfully completed by

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the bonafide students OF **DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING, Alva's Institute of Engineering and Technology**, Moodbidri affiliated to **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the academic 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.

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ABSTRACT

Vision is one of the most important senses that help people interact with the real world. There are nearly 200 million blind people all over the world, and being visually impaired hinders a lot of day-to-day activities. Thus, it is very necessary for blind people to understand their surroundings, and to know what objects they interact with. This project proposes a deep learning application to help blind people see through handheld device like mobile phone and computer. It integrates various techniques to build a rich deep learning application that will not only recognize objects around visually impaired people in real time but also give an audio output to assist them as quickly as possible. Also, this algorithm Convolutional Neural Networks (CNNs) gives nearly accurate results for real time object detection and is proven to be faster than other relative algorithms. The application further uses tensor flow and TextToSpeech API to give audio output.

The ability of people who are visually poor or have significant visual impairments to read printed text and product packages will enhance independent living and foster economic and social self-sufficiency. The contribution of this proposed system is mainly on methodological aspect, presenting an effective method of object detection and recognition. In order to enhance the blind people to become independent socially and economically, assisting object is one of the helping hand for them. Today there are many systems available, it is very difficult for blind user or visually impaired person to get location of that object. So, this system is proposing to solve this problem of blind people. This system will easily detect the text patterns from the image the detected objects are given as speech output to blind person.