OBJECT DETECTION USING AI

A PROJECT REPORT

Submitted by

MAHESWARI.S	112819104021
SINDHU.K	112819104052
GNANESWARI.B	112819104008
VANDANA REDDY.D	112819104062

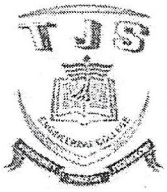
In partial fulfilment for the award of the degree

Of

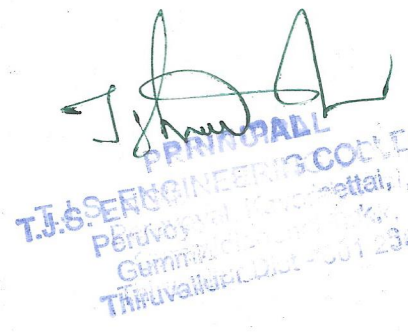
BACHELOR OF ENGINEERING

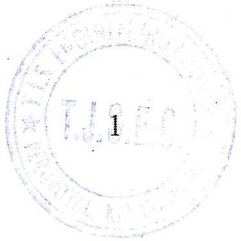
In

COMPUTER SCIENCE AND ENGINEERING



T.J.S. ENGINEERING COLLEGE, PERUVOYAL





ANNA UNIVERSITY: CHENNAI 600 025

Certificate that this project report "OBJECT DETECTION USING AI" is the bonafide work of the following students.

MAHESWARI.S	112819104021
SINDHU.K	112819104052
GNANESWARI.B	112819104008
VANDANA REDDY.D	112819104062

Who carried out the project work under my supervision

SIGNATURE

Dr.s.ANBU M.E.,(Ph.D).,

HEAD OF THE DEPARTMENT

Department of Computer Science and Engineering,

T.J.S. Engineering College,

Peruvoyal.

SIGNATURE

Mrs.S.V.PRIYANKA M.E(CSE).,

SUPERVISOR

Department of Computer Science and Engineering,

T.J.S. Engineering College,

Peruvoyal.

Submitted for viva voce held on 18/6/2022 at T.J.S. Engineering College, Peruvoyal.

INTERNAL EXAMINER

18/6/22

EXTERNAL EXAMINER

ABSTRACT

There is an ever-increasing amount of image data in the world, and the rate of growth itself is increasing. Infotrends estimates that in 2016 still cameras and mobile devices captured more than 1.1 trillion images. According to the same estimate, in 2020 the figure will increase to 1.4 trillion. Many of these images are stored in cloud services or published on the Internet. In 2014, over 1.8 billion images were uploaded daily to the most popular platforms, such as Instagram and Facebook.

Going beyond consumer devices, there are cameras all over the world that capture images for automation purposes. Cars monitor the road, and traffic cameras monitor the same cars. Robots need to understand a visual scene in order to smartly build devices and sort waste. Imaging devices are used by engineers, doctors and space explorers alike.

To effectively manage all this data, we need to have some idea about its contents. Automated processing of image contents is useful for a wide variety of image-related tasks. For computer systems, this means crossing the so-called semantic gap between the pixel level information stored in the image files and the human understanding of the same images. Computer vision attempts to bridge this cap.

Objects contained in image files can be located and identified automatically. This is called object detection and is one of the basic problems of computer vision. As we will demonstrate, convolutional neural networks are currently the state-of-the-art solution for object detection. The main task of this thesis is to review and test convolutional object detection methods.

In the theoretical part, we review the relevant literature and study how convolutional object detection methods have improved in the past few years. In the experimental part, we study how easily a convolutional object detection system can be implemented in practice, test how well a detection system trained on general image data performs in a