FINAL YEAR PROJECT REPORT

MOVING OBJECT DETECTION & ITS REAL TIME IMPLEMENTATION USING DEEP LEARNING

In fulfillment of the requirement
For degree of
BEE (Electrical Engineering)

By

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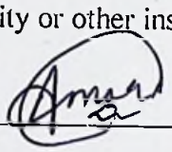
2018-2022

DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

Signature : 

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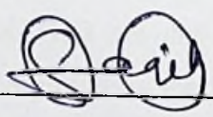
Signature : 

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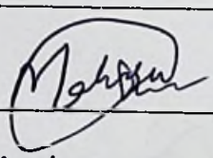
Signature : 

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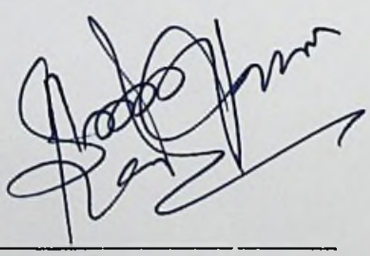
APPROVAL FOR SUBMISSION

I/We certify that this project report entitled "**MOVING OBJECT DETECTION AND ITS REAL TIME IMPLEMENTATION USING DEEP LEARNING**" was prepared by **MUHAMMAD MOHSIN MALIK, MUHAMMAD AMMAR, MUHAMMAD SAQIB** has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Electrical Engineering at Bahria University.

Approved by,



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In addition, We would also like to express my gratitude to our loving parent and friends who had helped and given me encouragement.

MOVING OBJECT DETECTION AND ITS REAL TIMEIMPLEMENTATION USING DEEP LEARNING

ABSTRACT

AI is a rapidly expanding field. Because of its ease of use, availability, and great performance. Deep learning on low-cost computers like the Raspberry Pi may be employed to achieve results. Detecting the objects in a hall or pathways can give an advantage in many ways such as security, monitoring and much more. In the context it can provide an Artificial replicated image through other senses by observing the environment through camera, to see if the throughput is sufficient for real-time object identification, we need some sort of algorithm that detect and recognize objects and tag them accordingly. The computer Vision provides the path to object detection and AI in this area. YOLO (You Only Look Once) change the whole concept by coming up with the model that uses linear regression as base in order to detect objects and provide much higher speed and accuracy. In this research pre-trained YOLO5 model is used to detect objects on a raspberry pi model 4B board that is a single board computer which provides good processing power with low power consumption.

One of the most important application using Computer Vision is Object detection that allows detecting instances of real time stream of images or static image. This allows to identify and locate object within the frame. To provide efficient object detection using raspberry pi is the aim of our project. Raspberry pi provides portability and power efficiency which makes this model a handy and environment friendly tool for monitoring and much more.

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