VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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Project Report on

"Deep Learning – Based Object Detection System Using YOLO Algorithm"

BACHELOR OF ENGINEERING

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CERTIFICATE

Certified for the assignment work entitled **"Deep Learning – Based Object Detection System Using YOLO Algorithm"** carried out by **Mr. MOHAMMED SINAN (4JK22IS032), Mr. MOHAMMED SHIBAN (4JK22IS033)**, **Mr. MOHAMMED FAHEEM (4JK22IS034), Mr. MOHAMMED IRFAN (4JK22IS035)**, bonafide students of A.J. Institute of Engineering & Technology, Mangaluru, in partial fulfillment for the award of **Bachelor of Engineering** in **Information Science and Engineering** of **Visvesvaraya Technological University, Belagavi** during the year 2024-2025. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The report has been approved as it satisfies the academic requirements in respect of Work prescribed for the said Degree.

Prof. USHA C S	**Dr. John P Veigas**
Assistant Professor	**Head of the Department**

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ABSTRACT

The Deep Learning-Based Object Detection System is an advanced solution designed to detect and classify objects in real-time. Powered by the state-of-the-art YOLO (You Only Look Once) algorithm, this system is capable of analyzing images and videos with exceptional speed and precision. By leveraging deep learning technologies, it efficiently identifies and distinguishes between various objects, making it highly useful for applications like agriculture, surveillance, robotics, and autonomous systems.

This project is specifically trained to detect and classify objects such as "crops" and "weeds", providing critical insights for applications like smart farming. The system processes visual data through a deep neural network, identifying objects and drawing bounding boxes around them with high confidence. Its intuitive design and robust performance make it accessible and practical for diverse use cases.

The purpose of this system is to simplify object detection tasks and enhance automation in various industries. Whether it’s optimizing agricultural productivity, improving safety in automated systems, or enabling efficient surveillance, this system demonstrates how deep learning can transform traditional workflows. With its ability to provide reliable and actionable insights, the Deep Learning-Based Object Detection System Using YOLO Algorithm is a powerful tool for innovation and practical problem-solving.

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