IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 2, December 2024

# Real Time Object Detection Using Artificial Intelligence

**Dr. Monika Rokade, ,Dr. Sunil S. Khatal, Nikita Avhad, Suyog Kute, Dhanashri Wadekar**
Department of Computer Engineering
Sharadchandra Pawar College of Engineering, Otur (Dumbarwadi), Junnar, Pune

**Abstract:** *Real-time object detection using artificial intelligence (AI) has revolutionized various applications by enabling machines to identify and locate objects in images and videos instantly. This technology leverages deep learning models, particularly convolutional neural networks (CNNs), to perform accurate detection tasks in dynamic environments. By processing large datasets, AI-based object detection systems can efficiently detect multiple objects, track their movement, and provide real-time insights, making it invaluable for industries like autonomous vehicles, security surveillance, and robotics. However, challenges such as speed-accuracy trade-offs, handling occlusions, and computational limitations persist. Advancements in AI algorithms, including real-time inference techniques and optimized network architectures, are continuously improving the performance and applicability of real-time object detection systems.*

**Keywords:** Real-time object detection, Artificial Intelligence, Deep learning, Convolutional Neural Networks (CNNs), Autonomous vehicles, Computer vision


DOI: 10.48175/568