

# Deep Eye – The Third Eye for Low Vision People

N. S. Sapike, S. S. Lavhate, Rutuja Daspute, Vaishnavi Sawant, Samrin Shaikh

Electronics & Computer Engineering  
Pravara Rural Engineering College, Loni , India

**Abstract:** *Deep Eye – The Third Eye for Low Vision People is an assistive technology solution designed to empower individuals with low vision by enabling real-time object detection and recognition using deep learning. The system leverages the YOLO (You Only Look Once) algorithm, a state-of-the-art object detection model, to identify and interpret the environment through a camera feed. The core objective is to provide an intelligent, fast, and efficient visual aid that audibly communicates the surroundings to the user. Despite the challenges of real-time detection, low latency, and resource constraints in embedded systems, this project proposes an optimized framework combining lightweight model deployment, real-time audio feedback, and efficient computation techniques to ensure seamless user interaction. Experimental results show that the system maintains high accuracy in diverse environments while offering rapid response times, making it a practical and impactful tool for enhancing the daily navigation and independence of visually impaired individuals*

**Keywords:** Low Vision, Assistive Technology, Object Detection, Barcode Scanner, Android Application, Real-Time Feedback, Accessibility

