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AI-Powered Object Detection for the Visually Impaired (AODVI)

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Abstract: *Visually impaired individuals face daily challenges in navigating safely through their surroundings. Traditional aids such as white canes and guide dogs offer limited support, as they only detect physical obstacles but cannot provide detailed contextual information. Without proper assistance, visually impaired people are at risk of accidents, dependency, and reduced independence. This project proposes the development of AI-Powered Object Detection for the Visually Impaired (AODVI), a system that integrates real-time object detection, location awareness, and voice-based feedback. The system captures video using a camera, processes it using lightweight deep learning algorithms (such as YOLOv8-Nano or MobileNet SSD), and identifies obstacles or objects in the path of the user. Detected objects and navigation information are then communicated via audio output, allowing users to move independently and safely*

Keywords*:* Image Processing, Machine learning, Visually Impaired, Object Detection, YOLO

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