VISUAL COMMUNICATION FOR TRAFFIC SIGN DETECTION

ABSTRACT

The project offers a real-time traffic sign detection and recognition system designed to improve road safety on Indian roads. To tackle the particular difficulties of the Indian traffic environment, the method combines the effectiveness of the You Only Look Once (YOLO) algorithm with cutting-edge image processing techniques. The main goals of this research are to increase driver awareness and decrease instances of missed traffic signs. The system quickly detects and warns drivers about impending signs without causing distractions by utilizing YOLO's high-speed object detection capabilities. Real-time, well-informed decision-making is made possible by its seamless integration into Advanced Driver Assistance Systems (ADAS) and self-driving cars. Accurate traffic sign recognition is a system focus. It interprets detected signs accurately using cutting-edge image processing techniques, giving drivers clear and understandable information about the meaning and instructions each sign is intended to convey. This feature is particularly important on Indian roads where signs may differ in terms of their linguistic and visual design. An Indian traffic sign dataset that captures the variety of signage found on Indian roads is used to assess the system's performance. The outcomes show how reliable the system is at spotting and identifying different traffic signs, confirming its applicability in the real world.

Keywords: Traffic sign detection, Traffic safety, Advanced Driver Assistance System, You only look once.