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AI-Self Braking Car and Transport Control System

Yamgar Shreyasi, Gunjal Pranali, Varde Srushti, Nimbalkar Vaishnavi, Prof. Mrs. M.K. Kute
Diploma Students, Department of Computer Engineering,
Guide, Department of Computer Engineering
Pimpri Chinchwad Polytechnic, Pune, India
shreyasiyamgar@gmail.com, pranaligunjal103@gmail.com, srushtivarde8126@gmail.com,
vaishnavinimbalkar38@gmail.com, monika.kute1993@gmail.com

Abstract: *Road accidents caused by delayed driver response, poor visibility conditions, and overloaded transport vehicles remain a major challenge in modern transportation systems. Rear-end collisions during fog, rain, or night driving frequently occur due to late obstacle detection, while overloaded commercial vehicles increase accident probability and damage road infrastructure.*

This paper presents an AI-Self Braking Car and Transport Control System designed to enhance road safety using intelligent sensing and automated control mechanisms. The system utilizes ultrasonic sensors for real-time obstacle detection and automatically activates fog lights, brake lights, and warning alarms. If the driver fails to respond within a predefined time, controlled automatic braking is applied to prevent collision.

Additionally, a transport control mechanism using microswitch sensors installed beneath speed breakers is implemented to detect overloaded vehicles and restrict their movement at toll gates. The proposed system is cost effective, reliable, and suitable for both private and commercial vehicles. Experimental results demonstrate improved accident prevention, reduced driver dependency, and efficient overload control, making the system suitable for smart transportation applications..

Keywords: AI Self Braking, Road Safety System, Ultrasonic Sensors, Transport Control System, Vehicle Overload Detection

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