

# Indigenous Robot for Advanced Driver Assistance System

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T. Thivya Tharshini; E. Jeevitha; S. Rayen Subhiksha; H. Jaya Dharshini; P. S. Manoharan **All Authors**

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## Abstract

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## Abstract:

This research work aims to reduce the number of road accidents and their serious impacts such as death and injuries by designing an automated driver assistance system (ADAS) using sensors and a microcontroller. The robot is incorporated with a Raspberry Pi Pico microcontroller that leads the motor direction based on the sensor inputs. The Ultrasonic sensor HC-SR04 detects the presence of objects within 20cm and sends the signal to Pico. The IR sensor fitted near the Ultrasonic sensor checks for black lane in front. The IR sensors on the side check for parallel black lanes. L298N Motor Driver controls the motor speed and is powered by a 12V supply. The Raspberry Pi is programmed to follow only the black lane and switch lanes when an obstacle is detected. Pico is programmed using the Thonny IDE.

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