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ROLL PREVENTION: PROTOTYPE AUTOMATIC BRAKING SYSTEM FOR CARS USING ULTRASONIC SENSOR

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ABSTRACT

The parking lot is where the cars temporarily left. There are times where drivers forgot to raise the handbrake of a car, causing the wheels freely to roll that may cause accidents in the parking space. Thus, the researcher investigates the implementation and efficacy of an automatic braking system using ultrasonic sensors. The number of accidents and collisions in parking lots necessitates innovative safety solutions to reduce risks and enhance vehicle and pedestrian safety. The researchers utilize the ultrasonic sensors strategically placed around the vehicle to detect nearby obstacles, pedestrians, and other vehicles in the parking lot environment. Upon detection of potential collision hazards, the system activates the vehicle's braking system automatically to prevent accidents and minimize damage. So, the researcher creates a prototype automatic braking system to simulate parking space. Data collection and analysis focus on evaluating the system's accuracy, reliability and effectiveness in preventing collisions and enhancing safety. The result in this study is having a corresponding distance for the prototype

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automatic braking system. With an average mean of the calculated distance in flat surface being 24.2 cm and in incline surfaces being 24.4 cm. Therefore, the distance between the obstacle and the prototype in parking areas is slightly same in flat and incline surfaces.