

# **FABRICATION OF INTELLIGENT BRAKING SYSTEM BY USING ARTIFICIAL NEURAL NETWORKS**

**A Project report submitted in partial fulfillment of the requirements for award of**

**Degree of**

**BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING**

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**AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY**

**(PERMANENTLY AFFILIATED TO JNTU-KAKINADA, ACCREDITED BY NBA &  
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# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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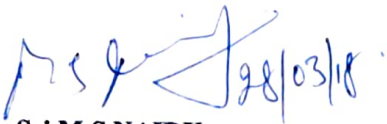
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## CERTIFICATE

This is certify that the project work entitled "**FABRICATION OF INTELLIGENT BRAKING SYSTEM BY USING ARTIFICIAL NEUTRAL NETWORKS**" is a bonafied record of work done by **CH.PRAVEEN KUMAR (15815A0306), V.KARTHIK (15815A0356), T.NETAJI (15815A0352), V.SHYAM KUMAR(15815A0354)** in partial fulfilment of the requirement for the award of Bachelor of technology in MECHANICAL ENGINEERIN by Jawaharlal Nehru technological university, Kakinada . During the year 2014-2018.



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PROJECT GUIDE



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## ABSTRACT

Braking is nothing but bringing a moving vehicle or moving body to a stop. Nowadays safety is an important feature in the automotive industry. The intelligent braking system is the next step to automation. Presently cars have the alarm system where when the car gets too close to an object an alarm is triggered which warns the driver about an object close by. But this feature has produced lot of problems and is prone to human error. We have enhanced the facility by using the same system but we have altered it so that the car brakes automatically when an obstacle is close by.

The aim is to design and develop a control system based on intelligent electronically controlled automotive braking system is called "Intelligent Braking System". Sensor Operated Pneumatic Brake consists of ultrasonic transmitter and Receiver circuit, Control Unit, Pneumatic breaking system. The ultrasonic sensor is used to detect the obstacle. There is any obstacle in the path, the ultrasonic sensor senses the obstacle and giving the control signal to the breaking system. The pneumatic breaking system is used to break the system. So basically here the car brakes on its own by determining the distance from the object.

All these systems employ different types of sensors to constantly monitor the conditions of the vehicle, and respond in an emergency situation. An intelligent braking system includes an ultrasonic wave emitter provided on the front portion of a car producing and emitting ultrasonic waves frontward in a predetermined distance. An ultrasonic receiver is also placed on the front portion of the car operatively receiving a reflective ultrasonic wave signal. The reflected wave (detected pulse) gives the distance between the obstacle and the vehicle and RPM counter gives speed of vehicle. The microcontroller is used to control the braking of the vehicle based on the detection pulse information to push the brake pedal and apply brake to the car stupendously for safety purpose.