

# **TWO STAGE TRAFFIC SIGN DETECTION USING NEURAL NETWORK**

## **Abstract:**

Traffic signs play a crucial role in managing traffic on the road, controlling the drivers, thereby preventing injury, property damage, and fatalities. Automatic detection and recognition of traffic sign is very much part of any Intelligent Transportation System (ITS). In this era of self-driving vehicles, calls for automatic detection and recognition of traffic signs cannot be overstated.

In this project we propose two-stage traffic sign detection system based on neural networks. Detection and classification of traffic signs is done using CNN and deep learning algorithms and the PYNQ board is used to implement the algorithm in hardware. It is now possible to automate the process of recognizing traffic signs using CNN. Once a traffic sign is detected, it can be classified based on its shape, color, and other features, and the information it conveys can be used to assist the driver or the autonomous driving system.

It can be used in vehicles to provide real-time information about traffic signs. It helps drivers and driverless cars to make informed decisions and improve road safety. It can be used in autonomous driving technologies enabling vehicles to interpret and respond to traffic signs accurately. It can contribute to the development of smart cities by providing data for traffic monitoring, urban planning, and environmental sustainability.

The result of the project will show that the system can effectively detect and classify the traffic sign with high accuracy.

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