|  |  |  |
| --- | --- | --- |
| **Guide Name** | | **Panel Head** |
|  | Dr. A. Jackulin Mahariba | Dr. Annie Uthra |
|  |  |  |
|  | **Faculty Advisor** | **Project Domain** |
|  | Dr. B. Hariharan |  |
| M |  |  |
|  | **Student(s) Details: Name** | **Passport size photo(s)** |
|  | 1. Aditya Chaturcedi 2. Pratham Sahu | **A person with a beard and glasses  Description automatically generated**  **A person in a blue suit  Description automatically generated** |
|  |  |  |

Registration Number(s)

1. RA2011033010012

2. RA2011033010031

**Email ID(s)&Mobile Number(s)**

|  |  |
| --- | --- |
| 1: ac2419@srmist.edu.in | 2: ps5118@srmist.edu.in |
| 7665001700 | 9044380233 |

**Abstract Architecture Diagram**

**A diagram of a flowchart

Description automatically generated**

"TSD For Safer Roads" addresses a critical need in India's road safety landscape, marked by a staggering annual toll of over 150,000 fatalities. The introduction of the (TSD) system represents a transformative step in mitigating the alarming rate of accidents by precisely categorizing traffic signs. In a country where non-compliance with traffic regulations, inadequate awareness, and diverse environmental conditions contribute significantly to road accidents, the TSD system emerges as a beacon of hope. The adaptability of the TSD system to varying lighting, weather conditions, and infrastructural disparities is especially pertinent in the Indian context. Its robust performance in real-time scenarios, detecting signs accurately under diverse conditions, addresses common challenges faced on Indian roads. By enhancing driver awareness, promoting better compliance, and responding promptly to changing road conditions, the TSD system stands as a valuable tool in the effort to reduce the toll of road accidents in India. The integration of this cutting-edge technology into India's traffic management infrastructure represents a proactive approach to road safety. Beyond being a technological advancement, it symbolizes a profound shift toward saving lives and creating a safer, more efficient road network. The TSD system stands as a testament to progress, offering a promising solution to the complex challenges posed by India's dynamic and diverse road environment.

**Significance of the Project Conclusion**

The Traffic Sign Detection (TSD) minor project holds significant importance as it forms the foundation for an advanced major project. By successfully implementing a Convolutional Neural Network (CNN) model for TSD, crucial skills in image processing and deep learning have been honed. This minor project serves as a practical application of computer vision in the context of traffic management, laying the groundwork for the major project's ambitious goal of autonomous traffic flow control through V2X communication. It showcases a hands-on understanding of data pre-processing, model development, and sets the stage for the seamless integration of V2X technology for enhanced traffic management solutions.

The development and deployment of the Traffic Sign Detector (TSD) system mark a significant milestone in the evolution of traffic sign recognition technology. Leveraging state-of-the-art technologies, particularly CNN and adaptive learning mechanisms, the TSD system achieved commendable accuracy and adaptability in identifying and categorizing traffic signs within images and videos. Its sophisticated object localization and classification modules played a crucial role in ensuring precise categorization into regulatory, warning, and informational classes, ultimately contributing to improved road safety and more efficient traffic management.

**Conference/Journal Publication Details (If Any)**