**Abstract**

Motorcycle accidents have been rapidly growing throughout the years. Due to various social and economic factors, this type of vehicle is becoming increasingly popular. Bike riding is a lot of fun, but accidents happen. People choose motorbikes over car as it is much cheaper to run, easier to park and flexible in traffic. In India more than 37 million people are using two wheelers. Since usage is high, accident percentage of two wheelers are also high compared to four wheelers.

Motorcycles have high rate of fatal accidents than four wheelers. The impacts of these accidents are more dangerous when the driver involves in a high speed accident without wearing helmet. It is highly dangerous and can cause severe deaths. So wearing a helmet can reduce these number of accidents and may save the life.

This paper aims for avoidance of accidents and develop helmet detection system. This project aims to design and develop a system which automatically detects motor cycle riders without helmet and triple riding using image processing of a live feed from surveillance camera.Surveillance is very essential for the safety of power substation. The detection of whether wearing safety helmets or not for perambulatory workers is the key component of overall intelligent surveillance system in power substation. The extracted details are stored for appropriate future actions.