

# Design of Electronic Device To Prevent On-Road Wheeling For Two-Wheelers

Asst. Prof. Jaya Shubha J , Spoorthi P Shetty, Subhashini D, Vadde Sneha

Department of Computer Science

KSSEM, Bangalore, India

jayashubha@kssem.edu.in, spoorthipshetty1234@gmail.com, Swapnasubhashini200@gmail.com  
2001vsneha@gmail.com

**Abstract-** Driving has become difficult in the presence of bikers, who resort to dangerous stunts on busy roads despite the ban on the practice of the same. It is evident through enough cases where reckless youngsters risk their lives and perform dangerous stunts, one is wheeling. Recent years have seen an alarming rise in this dangerous trend amongst the youth. However, the police have miserably failed to curb this fatal practice amongst which has claimed several lives in the past. The project aims at developing an electromechanical device to prevent the wheeling of two wheelers on road. The need of such device is necessary for our society. These daredevils are often seen driving their motorcycles during the day and night on the back wheel, driving inversely and doing other dangerous tricks. So here is an electronic mechanical equipment which avoids the same. The bike consists of inbuilt sensor which sends a signal to the arduino board and stops the vehicle. It also sends a message to the police control room about the vehicle number and its location. The increasing trend of one-wheeling and bike-racing continues on roads, creating troubles for traffic. Therefore here comes a small effort of us for curbing the same. The usage of this device can save many lives and prevent such injuries that could not be repaired and cured by surgery as it would be a complicated task and minimize the chances of survival.

**Keywords –** unemployment, labour market institutions, non-institutional factors

## I. INTRODUCTION

The increasing trend of wheeling and bike-racing continues on the busy roads of the twin cities, creating troubles for traffic. A number of youngsters can be seen resorting to wheeling and bike-stunts on various roads, particularly on Highway, posing a risk to their lives and to that of others. The youths are more delicate in case of are of doing something uncommon stunts. It distracts them by thinking pessimistically and doing such, they think is right. The adolescents have their own rough hobbies that not solely endanger their life, however additionally place a negative impact on their folks life. Driving has become difficult in the presence of bikers, who are performing dangerous stunts on busy roads despite the ban on these practices by the government Territory administration.

The ICT administration should take action against wheeling and bike-racing Physics Behind Wheeling. When a motorcycle moves on a level surface, the force of gravity is exerted on the center of mass of the motorcycle and the normal forces (acting in the opposite direction of gravity) are exerted by the ground on the front and rear wheels. More specifically, you need to balance the torques acting on the rear wheel. If the game of death is not stopped soon, its fire almost wraps all the youth into it

which will cost us roughly in near future, to anticipate such offense it is truly vital to ban such bike wheeling actions. So considering all these things we have come up with an idea to stop wheeling of two wheelers by installing an electromechanical device to the two wheelers.

## II. RELATEDWORK

Summary:

1. Three youths, allegedly doing wheeling stunts, die in accident in Bengaluru. (Daijiworld Media Network-Bengaluru, Sun, Jun 21, 2021) Three youths lost their lives in a ghastly accident that occurred at Yelahanka. They were allegedly attempting wheeling stunts with their bikes on the main road when the accident took place. It is learnt that two of the bikes collided head-on.

2. Biker who caused death by wheeling arrested. (Bangalore Mirror Bureau, Sep, 8, 2016)

An 18-year-old youth, has been arrested after his stunts on a motorcycle allegedly resulted in the death of a girl on September 1 on the Old Madras Road. The police have identified the accused and arrested by the In diranagar traffic police.

3. Dirt-biker rider doing 'Wheelie' seriously hurt after crash with minivan on Long Island. (Daily Voice, Feb, 06,

2021) Detectives from the Nassau County Police Department said that at 3:30 p.m. on Tuesday, June 1, the man was driving an unregistered dirt bike north on Grand Avenue in Baldwin when he crashed into a 2011 Toyota minivan. As a result of the collision, the driver of the dirt bike suffered “severe trauma injuries” and was transported to an area hospital for treatment, police said that operator of the minivan was not injured. There were no passengers inside the vehicle. Police said that witnesses to the crash stated the dirt bike was “traveling at a very high rate of speed and was doing a „wheelie“ as he collided with the other vehicle.”

### III. PROPOSED SYSTEM

In this Project, Firstly we have noted down the components and assembly of the components are done accordingly, required coding for the project is done. Initially the gyro sensor will be in  $0^\circ$  with respect to the vertical position, once the gyro sensor will be tilted above  $30^\circ$  the gyro sensor sends the signal to the Arduino unoboard . Once the signal is received the Arduino uno board sends corresponding signal to the GSM, GPS and Relay module. GSM sends the message to the police control room about the location and vehicle number using the GPS. Finally using the relay module the power from the device is cut off for about 10 minutes. By using this project lot many lives will be saved and brings a halt to the wheeling action ensuring travel safety.

The components used in the fabrication of electromechanical device are very economical and user friendly. Arduino Uno is a microcontroller board used. It is the brain of th entire system monitoring angle and communication with the other modules in the system and the board is powered using a buck converter. Input of the buck converter is 12v from a battery. Arduino Uno communicates with MPU6050 using i2c communication with respect i2c pins and with processing converts the raw data into data. This is used to detect the angle of the vehicle.

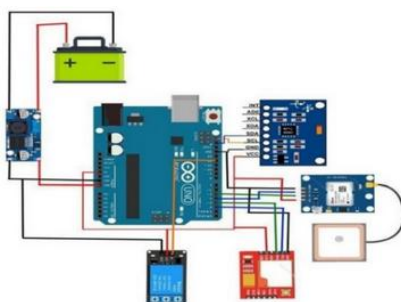


Fig .1 Circuit Diagram.

The vehicle GPS module communicates with arduinouno using UART protocol and it is attached on pin 4 and 5 of arduino. GSM modules also communicates with the Arduinouno using UART protocol. GSM is attached on the pin 2 and 3 of arduino. firstly acculate the required components and sensors that are needed for designing the wheeling prevention device. Fabrication of the electronic device. by conducting certain test conditions checking the performance of the device. Finally mount the electronic device in the two wheeler.

### IV. RESULT AND ANALYSIS

After Conducting certain test conditions, the arduinouno is given certain fixed angle when the angle is above the fixed position then it triggers the current location of the vehicle is captured using the GPS and send to the contact specified in the code using GSM module, also relay module is used to cut off the power hence putting the vehicle in off state for 10 minutes.

### V. CONCLUSIONS

In Everyday life, there are certain unfortunate accidents, damages, or injuries happening to the vehicle riders due to lack of sincerity and having a tendency to attempt vehicle wheeling. Wheeling is a vulnerable activity that causes damage and in order to prevent this we have come up with a system that detects the commence of wheel upraise and detects the angle position and sends a message to the wheeling device and make the vehicle switch off. By prevention of wheeling a lot many lives will be saved and brings a halt to the wheeling action ensuring travel safety. The components used in the fabrication of electromechanical are very economical and user friendly.

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