Bike Safety System

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Abstract – A little care makes accident rare so to avert such mischance bike safety system plays vital role. This system consists of two features smart helmet and smart bike. Smart helmet consists of heartbeat sensor, alcohol sensor for compulsory use of helmet. As well as vibration sensor for accident detection and message send with the help of GPS and GSM. Smart bike consist of face recognition for avoiding robbing of bike.

Key Words: **Rider's safety, Accident detection and alert system, Alcohol detection**

1. INTRODUCTION

Number of accidents is increasing day by day, so there is a need of increasing bike riders safety. But still in Indian society, there is a lack of awareness about the importance of safety rules like wearing a helmet or avoiding alcohol consumption before bike riding. Bike riders often prefer style over safety. Another problem regarding bike is, prevention against bike thieves. Stealing of bike is also increasing.

The solution we are proposing for these two problems are: First, A system which forces bike rider to follow safety related rules. We can make it possible by locking the engine ignition of bike, which can be unlocked only if bike rider is wearing a helmet and is not drunk. Second, A system which recognises owner of bike. This can be done using face recognition algorithms with a camera and again by preventing engine ignition in the absence of owner.

2. BLOCK DIAGRAM

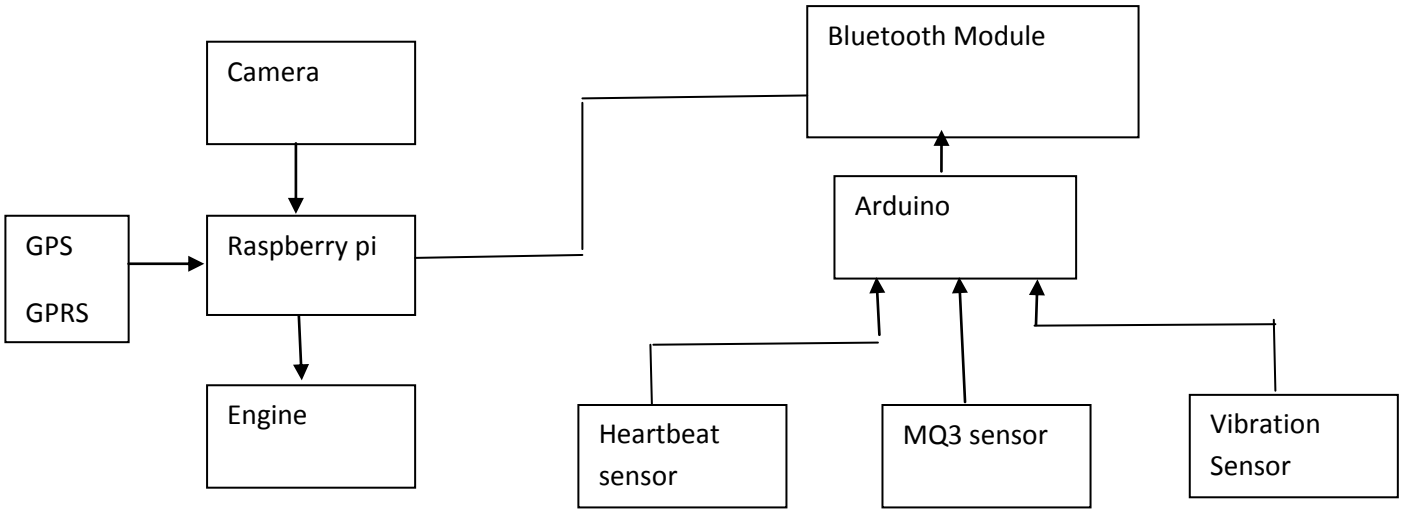


Fig2. Block diagram of Bike Safety system

For two different systems we are having two different modules. First system(helmet system) will be based on Arduino where a heartbeat sensor is placed on back side of neck of rider so it will continuously count heartbeats. As well as alcohol sensor is interfaced to knowing alcohol consumption of rider. If any one is failed rider will unable to start the bike. Apart from thus the another sensor that is vibration sensor is placed for detecting accident and it will send message to nearby hospital and home with the help of GPS and GSM.

4. METHODOLOGY

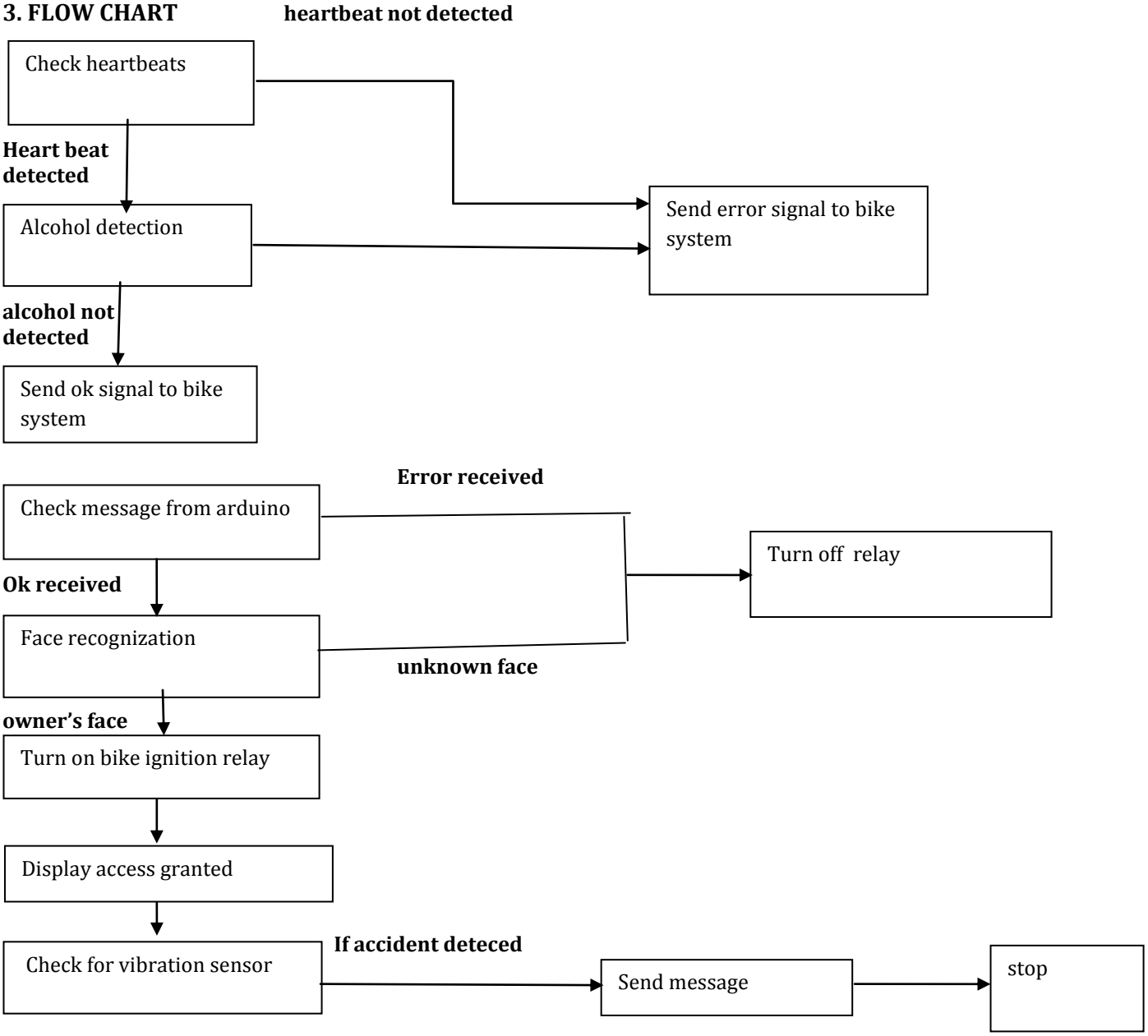
Existing System:

In recent times helmets have been made compulsory in Maharashtra State. Traffic accidents in India have increased year by year. So to overcome these disadvantages, we have proposed a system which will reduce the road accidents.

Proposed System:

We are proposing this system to make automation of entire process of current system. The first step is to identify the helmet is wear or not and detect alcohol consumption. If helmet is wear then bike will start otherwise it will remains off till the helmet is not wear. The second step is alcohol detection. Alcohol sensor is use as breath analyzer which detect the presence of alcohol in rider breathe if it is exceeds permissible range ignition cannot start. It will send the message to register number. MQ-3 sensor is used for these.

3. FLOW CHART



5. GENERAL ALGORITHM OF EXISTING SYSTEMS

First it will check for rider heartbeats and next it will check for alcohol is not detected. If both happens bike will start. After starting bike if any accidents happen it will be detected with the help of vibration sensors. Also with the help of GPS and GSM we are sending location of bike to nearby hospitals and home. Besides this if any other person different from rider is trying to start bike, bike will not start because of webcam and face recognition unit.

6. RESULTS

With the help of helmet detection system it will avoid the rider ride bike without helmet. If rider does not wear helmet then the LCD will display as "NO HELMET PLS WEAR IT"

2. Once Bike unit detected that there was an accident then GSM send location of accident with the help of GPS. It sends latitude and longitude continuously to saved SIM number and track the location.

7. CONCLUSION

This technology will help to improve human safety. The outcomes of the project have showed that the bike ignition will start if the helmet is worn. So, it will automatically decrease the effect from accident and it can avoid bike from being stolen

8. FUTURE WORK

It can be used for passing message from the one vehicle to another vehicle by using wireless transmitter. We have used solar panel for helmet power supply by using same power supply we can charge our mobile. We can implement various bioelectric sensors on the helmet to measure various activity. We can use small camera for the recording the drivers activity.

9. REFERENCES

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