

LITERATURE SURVEY

TITLE : Automatic Railway track fault detection for Indian railways

AUTHOR : Parvathy A. et al.

YEAR : 2017

CONTEXT:

The Automatic Railway Route automatically detects the fares of the Indian IEEE Rail Automatically and detects cracks very quickly without human intervention. Indian railway is the largest railway network in Asia and additionally world's second largest network operated underneath a single management. The railways became the prime suggests that of transportation because of their capability, speed and responsibleness. Even a small improvement in this sector will aid the overall development of a nation. Due to the gigantic size, it's a tedious task to monitor and maintain the rails in a timely manner. The poor maintenance of the railway tracks will result in accidents. Occurrence of cracks in tracks became a serious concern for the railway. The rail cracks should be identified and corrected as early as possible as it poses a serious threat to the safe operation of the carriages. This proposal aims at elimination of the long prevailing issues in this sector.

TITLE : Train track fault detection system

AUTHOR : Swati D. Patil & Pallavi. M. Taralkar

YEAR : 2018

CONTEXT:

Source of International Journal of Current Engineering and Scientific Research (IJCESR). Rail crashes have been identified as a major cause of accidents in the past. So, the solution to this problem is using the robot to detect cracks in the train track and when the robot detects an error it sends a message to the base station. Many image preprocessing steps are used to detect railway track cracks. The image is prone to noise. System converts image to grayscale image and uses filtering to remove noise from image. Noise removal helps to detect cracks more accurately. Image luminous level is increased and image is converted to binary image. This helps the system to detect only cracks and helps to remove other unwanted objects. Image once

converted to binary image, holes are filled by using image processing method this helps to reject all smaller objects which are not required for crack detection.

TITLE : A Smart Fault Detection System For Indian Railways

AUTHOR : Mishra, A. Shrivastava and B. Shrivastav

YEAR : 2019

CONTEXT:

The device built will be attached to a train engine and contains a sensor that can detect a few meters cracks and as soon as any cracks are found the train driver will receive a signal to install emergency brakes and the authorities will be notified of the correct location of the fault. Source of International Journal of Scientific & Technology Research. The primary goal of using IoT is to particularly minimize operating expenditures when automation devices like sensors and actuators have become internet-enabled devices. The proposed system would enable running high speed trains. This project will reduce the number of accidents due to a train derailment. The proposed system will also have a sensor to detect if there is any obstacle. With the help of this sensor, we could reduce the death rate of humans as well as animals and the collision of the train can also be controlled.

TITLE : Self Powered For Railway Track Monitoring Using IoT

AUTHOR : M. Banupriya et al.

YEAR : 2019

CONTEXT:

This has resulted in a rapid increase in surveillance of systems, buildings, vehicles, and machines using sensors. Source of IOSR Journal of Engineering (IOSR JEN). Currently railway track inspection and monitoring is done manually which is time taking and not accurate, due to the high chance of human error occurrence. Moreover, practically it is impossible to inspect and monitor the railway track manually as they run thousands of miles. This paper describes the

range of sensing technologies has expanded rapidly, whereas sensor devices have become cheaper. This has led to a rapid expansion in condition monitoring of systems, structures, vehicles, and machinery using sensors. Key factors are the recent advances in networking technologies such as wireless communication and mobile ad hoc networking coupled with the technology to integrate devices.

TITLE :Railway track fault detection system using IR sensors and Bluetooth technology

AUTHOR :B. Siva Rama Krishna et al

YEAR : 2017

CONTEXT:

In the event of any defect on the track it will detect a track defect using IR sensors and then it sends a message to the android phone using a Bluetooth module. Source of Asian Journal of Applied Science and Technology (AJAST) . Economic prosperity has always been dependent on increasing the capacity and rationality of transport. But the infrastructure and operation of transport has a great impact on the land and is the largest resource of energy, making transport sustainability and safety a major issue. Transport is very important to carry the passengers and goods from one place to another. Better transport leads to more trade. Economic level mainly depends on increasing the capacity and level of transport. In this paper we use IR sensors to detect the crack in railroads. When the crack is detected its latitude and longitude values are sent as a message to the mobile phone. Then an IR sensor is used for the surveying process [2]. This system is designed using Arduino Uno (ATmega328), IR sensors and Bluetooth to perform a railway safety monitoring system.