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Vehicle Incident Detection System in Automobile Industries

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ABSTRACT: The project is designed to eliminate the vehicle incidents at water booth entry by using object and counting sensor. Only one operator feed the vehicle into the water booth entrance. This will results less concentration into the operator so there is chance to feed the vehicle with gear engaged condition. If operator park the vehicle with gear engaged position in water booth conveyor, the error proof system will not allow the vehicle into the water booth. To avoid these incidents we are fixing two sensors in the conveyor. The first is object sensor which sense the front and rear wheel in the vehicle and another sensor is counting sensor which counts the conveyor slot. When the vehicle is in gear engaged position, initially the object sensor senses the front wheel and counting sensor counts the conveyor slot. The vehicle in gear position first moves forward and then moves reverse direction slowly. In this case the rear wheel not entered, after counting the 12 slots so line will stop and we can identify the vehicle in gear engaged condition. So the information reached microcontroller then the buzzer alters everyone.

KEYWORDS: Water Boot Entry, Counting Sensor, Conveyor Slot, Buzzer.

I.INTRODUCTION

To avoid the incidents due to vehicle in gear engaged condition at water booth entry. Our goal is to accurately estimate the count. However, we evade the hard task of learning to detect and localize individual object instances. Instead, we cast the problem as that of estimating an image density whose integral over any image region gives the count of objects within that region. Learning to infer such density can be formulated as a minimization of a regularized risk quadratic cost function [3]. We introduce a new loss function, which is well-suited for such learning, and at the same time can be computed efficiently via a maximum sub array algorithm [1]. The learning can then be posed as a convex quadratic program solvable with cutting-plane optimization. We target the regime where individual object detectors do not work reliably due to crowding, or overlap, or size of the instances, and take the approach of estimating an object density main contribution is an interactive counting system, along with solutions for its main components. Thus, we develop a feature vocabulary that can be efficiently learnt on-the-fly as a user provides dot annotations – this enables densities to be generated in an interactive system.

Furthermore, we show that object density can be estimated simply, accurately and efficiently using ridge regression – this matches the counting accuracy of the much more costly learning-to-count method. Finally, we propose two novel visualization methods for region counts that are efficient and effective – these enable integral count regions to be displayed to quickly determine annotation points for relevance feedback. Here, we present a system that addresses the counting task through interactive machine learning [2]. The interactive system is demonstrated on a variety of visual material, including photographs, microscopy and satellite images.

II. EXISTING SYSTEM

In existing system manual drive vehicles, LH and RH drive vehicles comes to the same line. Only one operator feed the vehicle into the water booth entrance. So the operator has more work load. This will results less concentration to the operator so there is chance to feed the vehicle with gear engaged condition. So an accident arises in the conveyor.

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DRAWBACKS OF EXISTING SYSTEM

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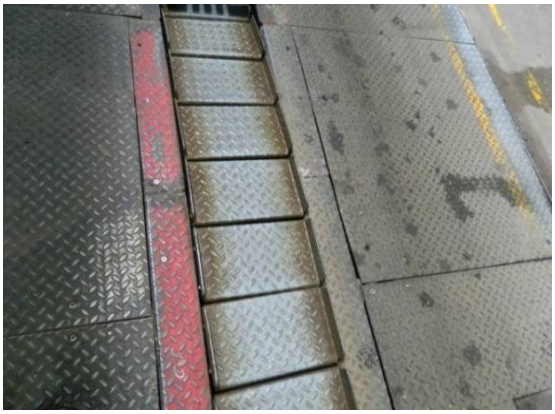
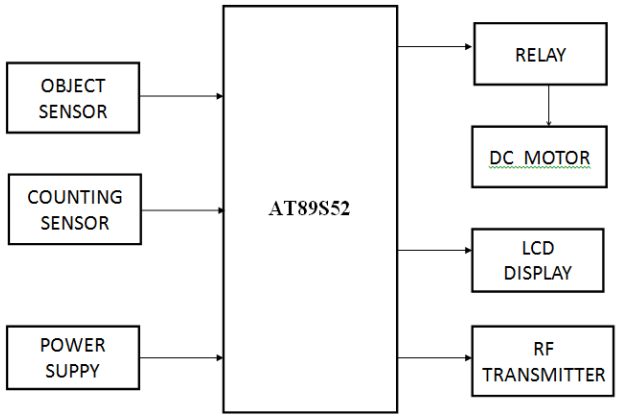


The counting problem is the estimation of the number of objects in a still image or video frame. It arises in many real-world applications including cell counting in microscopic images, monitoring crowds in surveillance systems, and performing wildlife census or counting the number of trees in an aerial image of a forest.

III. PROPOSED SYSTEM

To avoid vehicle to vehicle incidents in water booth entry, we are using proximity sensors. So we are connecting object sensor and counting sensor in the conveyor. If the vehicle is in gear engaged condition, the sensor senses and sends information to the microcontroller. It avoids vehicle to vehicle accidents. **BLOCK DIAGRAM**

TRANSMITTER SECTION



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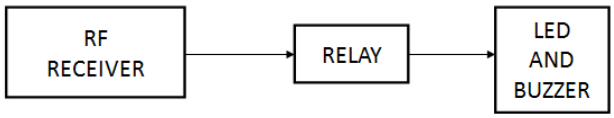
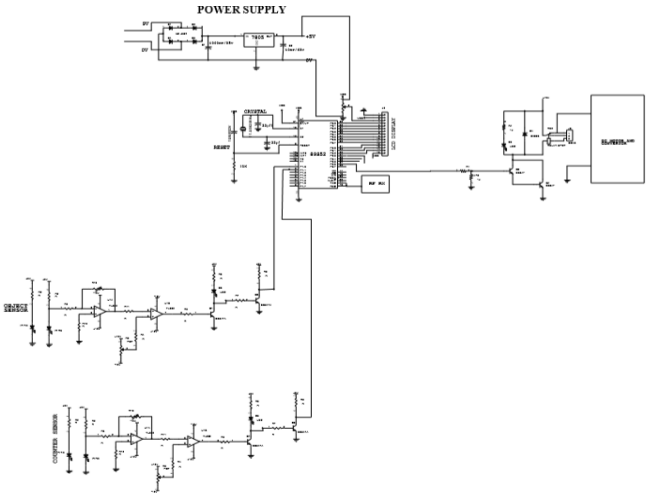
RECEIVER SECTION:



III. HARDWARE DESCRIPTION

OVERVIEW

Our systems consist of two main units they are transmitter unit, receiver unit the operation of these units are describe in below. In this transmitter section is used to transmit the data between the sources to destination through the water booth entry.



The most cheapest and commonly available energy source of 230v-50Hz and step down, rectifying, filtering and regulating the voltage. A 230v,50Hz single phase AC power supply is given to a step down transformer to get 12V supply.

IV. OPERATION

Basic Idea is to send infrared light through IR LEDs which is then reflected by any object in front of sensor. One of the biggest problems that can cause the malfunctioning of an IR proximity sensor, is the ambient light and surrounding sources of IR like the sun and halogen lamps that can cause false triggering of the sensor due to emission of infrared light. To avoid getting false detection the solution is to send pulses of IR light at a certain frequency instead of a constant beam, and build a receiver that would only detect IR pulses of the same exact frequency, cutting of all pulses of higher or lower frequency. The kind of device capable of filtering signals this way is called a band pass filter. There are a lot of types of band pass filters, a whole branch of electricity is dedicated to this subject. Instead of building a band pass filter, we used a very common IR receiver Module TSOP1738, that incorporates a receiver, an amplifier and a very reliable filter that rejects all the signals that are a couple of kilohertz far from the original central frequency, all in one single integrated circuit, just as big as a 5V regulator. The central frequency is fixed by the constructor usually at 40 kHz.

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V. RESULT AND DISCUSSION

HARDWARE IMPLEMENTATION OF TRANSMITTER SECTION:

In this section the circuit is designed to control the buzzer. The buzzer ON and OFF is controlled by the pair of switching transistors (BC 547). The buzzer is connected in the Q2 transistor collector terminal. When high pulse signal is given to base of the Q1 transistors, the transistor is conducting and close the collector and emitter terminal so zero signals is given to base of the Q2 transistor. Hence Q2 transistor and buzzer is turned OFF state. When low pulse is given to base of transistor Q1 transistor, the transistor is turned OFF. Now 12v is given to base of Q2 transistor so the transistor is conducting and buzzer is energized and produces the sound signal.

VI. CONCLUSION AND FUTURE WORK

This paper is mainly used to avoid collision between the vehicles in the conveyor slots .Because of this type of vehicle collision causes a major loss to the automobile industries .So our project is implemented to eliminate this collision. We would like to do future work for any advanced object counting algorithm replaced by water booth entry.

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