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Criterion 3: - Research, Innovations and Extension

Sl. No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (DOI) number
							OTHERS
	2020-2021						
1	Semantic Based Security for Health Data over Sensor Network	Srinivasan K.S	EEE	International Journal of Future Generation Communication and Networking	2020-2021	673-688	Others
2	Semantic Based Security for Health Data over Sensor Network	Muthukumar B	CSE	International Journal of Future Generation Communication and Networking	2020-2021	673-688	Others
	2019-2020						
1	Survey on finite automata construction	J.Nirmala	CSE	The International journal of analytical and experimental modal analysis	2019-2020	0886-9367	Others
2	Survey on finite automata construction	V.Rajathi	CSE	The International journal of analytical and experimental modal analysis	2019-2020	0886-9367	Others
3	Problem Selection Methodology (PSM) for Automobile components manufacturing industry By using hml & ranking method	Senthil Kumar R	Mechanical Engineering	Alochana Chakra Journal	2019-2020	2231-3990	Others
4	Problem Selection Methodology (PSM) for Automobile components manufacturing industry By using hml & ranking method	Ramesh G	Mechanical Engineering	Alochana Chakra Journal	2019-2020	2231-3990	Others

3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10)

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No	Title	Author	Department	Journal	Year	ISSN	Category
5	Problem Selection Methodology (PSM) for Automobile components manufacturing industry By using hml & ranking method	S.Deepak Kumar	Mechanical Engineering	Alochana Chakra Journal	2019-2020	2231-3990	Others
2018-2019							
1	Weld Formation Studies on Friction Stir Welding of Dissimilar Magnesium Alloys AZ31B and ZM21	Prasath. S	Mechanical Engineering	International Journal of Mechanical and Production Engineering Research and Development	2018-2019	2249-6890	Others
2017-2018							
1	Embedded Prepaid Energy Meter System to Control Electricity	Dr. S. Sivasubramanian	CSE	International Journal of Recent Trends in Engineering & Research (IJRTER)	2017-2018	2455-1457	Others
2	Embedded Prepaid Energy Meter System to Control Electricity	Mohammed Ibrahim Hussain	CSE	International Journal of Recent Trends in Engineering & Research (IJRTER)	2017-2018	2455-1457	Others
2016-2017							
1	Tracking and Detection of Automatic Vehicle Locking Mechanism For Negligence of Insurance Payment	I.S.Suganthi	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
2	Tracking and Detection of Automatic Vehicle Locking Mechanism For Negligence of Insurance Payment	E.Jayanthi	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
3	Tracking and Detection of Automatic Vehicle Locking Mechanism For Negligence of Insurance Payment	S.Priyadharshini	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
4	Tracking and Detection of Automatic Vehicle Locking Mechanism For Negligence of Insurance Payment	K.Sabitha Banu	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others

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5	Red Lesion Detection Using Dynamic Shape Features For Retinal Images	E.Dhiravida chelvi	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
6	Red Lesion Detection Using Dynamic Shape Features For Retinal Images	C.Karthick	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
7	Red Lesion Detection Using Dynamic Shape Features For Retinal Images	J. Raja	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
8	FPGA Based Image Acquisition and Processing System Based on ARM	S.Priyadharshini	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
9	FPGA Based Image Acquisition and Processing System Based on ARM	Ranjana.D	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
10	Location Detection and User Authentication for secured ATM by using OTP	Naveenkumar.S	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
11	Location Detection and User Authentication for secured ATM by using OTP	B. Alagar Ramanujam	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others
12	Location Detection and User Authentication for secured ATM by using OTP	M.L. Syed Ali	ECE	AIIS Journal of Advances In ECE (JAECE),Volume 4,Issue 2,Dec 2016	2016-2017	2349-1000	Others

Semantic Based Security for Health Data over Sensor Network

Muthukumar B[1], Sathiyamurthy K[2], Jagan A[3] and Srinivasan K.S[4]

[1]Professor, Dept. of CSE, Mohamed Sathak A.J. College of Engineering, Chennai, India
[2]Associate professor, Dept. of CSE, Pondicherry Engineering College, Puducherry, India
[3]Associate professor, Dept. of CSE, Suriya Group of Institution, Tamilnadu, India
[4]Professor, Dept. of EEE, Mohamed Sathak A.J. College of Engineering, Chennai, India

Abstract

An acquiescent of wireless technologies, micro-electromechanical systems (MEMS), micro-services and the internet paved an ecosystem named Internet of Things (IoT), which ascertains link between physical objects that are reachable through the internet. The embedded technology in those objects succors them to interact with internal states or the external milieu, which in turn influences on decisions. This new connectivity, bridges the gap between physical objects and digital world to improve the quality and productivity of life, has become common and going beyond laptops and smartphones, in applications like cars, smart homes, smart cities, healthcare, retails, energy management agriculture, wearables etc. IoT connects smart objects together (through internet and intelligent sensors) using internet protocol, and make them to be read, controlled, and managed at any time at anywhere. Since this communication is in the public environment, these devices are vulnerable to attacks, and hence the security and privacy are vitiated. Detection of abnormality in propositional information must be followed by recovery action to ensure the correct semantics of the frame network. This paper focuses on building a semantic based security platform to analyze the data received from sensors using Hidden Markov Model (HMM), semantic sensor network ontology, and temporal ontology to detect the malicious attack data. The HMM is used for reasoning purpose and the label for visible states are created. The Stream Annotation Ontology is used to represent the quality of the data over the Semantic Sensor Network Ontology.

Keywords: Abnormal data, Hidden Markov Model, Internet of Things (IoT), k- means clustering algorithm, security breaches, semantic, Stream Annotation Ontology, Semantic Sensor Network (SSN), Quality Ontology.

1. Introduction

The internet of things (IoT) is the nascent technology which has the potential to change the environment into smart by incorporating various types of sensors and actuators like vehicle sensor, medical sensor, camera surveillance and other home appliances together. It has the savvy and vision to make machines smart enough to wane human labour to almost nil [1].The sensors and actuators are configured and can be controlled remotely through the internet. The smart devices connected to internet by using network protocol which led to the advent of many applications such as smart city, home automation, smart grid, traffic management, smart parking, smart waste management, smart health etc. According to Gartner report, by 2020 connected devices across all technologies will reach to 20.6 billion [2]-[4].

IoT is changing the lane of medical environment by attaching tiny smart devices and sensors in the patient body. The construction of smart healthcare system needs to connect to the internet directly or indirectly always, which allows the physician to monitor the arrhythmia events and abnormal ECG signals for medical diagnosis and correct treatment

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KANCHIPURAM DT.

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PRINCIPAL
MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING
EGATTUR-603 103.
KANCHIPURAM DT.

SURVEY ON FINITE AUTOMATA CONSTRUCTION

Ms.J.Nirmala[1], Mrs. V.Rajathi[2]

[1,2] Assistant Professor, Department Of Computer Science and Engineering, Mohamed Sathak A J College of Engineering, Chennai, Tamilnadu, India.

Abstract - In theoretical foundations of computer science many problem are solved and efficient algorithm is designed for finite automata and are used in many fields for solving complex problem. Various forms of finite automata comes likes deterministic finite automata, non-deterministic finite automata, push down automata and so on. The study of automata and its accepted languages illustrated and conversion of non-deterministic finite automata to deterministic finite automata with algorithmic approaches are found. Thus using various finite automata algorithm, size and time complexity is reduced using various techniques. Programming languages are used for constructing various forms of finite automata and to accept binary input string. This paper intended to study different approaches of finite automata construction.

Keyword - Finite automata, deterministic finite automata (DFA), Non deterministic finite automata (NFA).

I   INTRODUCTION

Computation is a process of taking some input and performing required operation to produce output based on algorithm. Finite automata requires input as a string from input tape thus the input tape is divide into cells and each cells will have one input symbol. The read head reads one symbol at a time and moves the pointer to next symbol. Finite automata contain set of states and move transition depends on input symbol. In finite automata, non-deterministic finite automata is a finite set of state with one start state and set of accepting state. It allows 0, 1 or more transition from a state for same input symbol. Deterministic finite automata consist of finite set of states and finite set of input tape. It allows transition from state with different input symbol not with same input symbol.
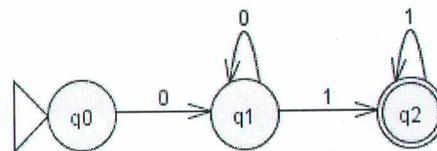

Fig 1.1 Deterministic finite automata

In this automaton Fig 1.1, there are three states: q0, q1, and q2 the automaton takes a finite sequence of 0s and 1s as input where q0 is start state, q1 is intermediate state and q2 is final state. Each transition moves for input string either 0 or 1, In Fig 1.1 DFA moves from q0 to q1 and q1 to q1 (self-loop) for 0 as input symbol and transition moves from q1 to q2 and q2 to q2 (self-loop) for 1 as input symbol.

II   A BROAD VIEW ON FINITE AUTOMATA CONSTRUCTION

Finite automaton is used in various fields in solving complex problem using algorithms and different techniques. In the following section review of different finite automata approaches are given.

A. ALGORITHMIC AND PROBLEMATIC APPROACH BASED ON NFA AND DFA

Himanshu Pandey et al, [8] In order to reduce the problem of minimal non deterministic finite automata

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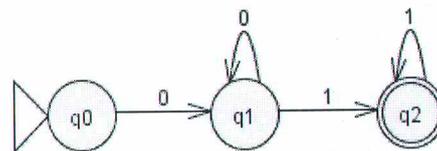

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"PROBLEM SELECTION METHODOLOGY (PSM) FOR AUTOMOBILE COMPONENTS MANUFACTURING INDUSTRY BY USING HML & RANKING METHOD "

S.Deepak Kumar [1*] , Dr.R.Senthil Kumar[2] , A.Tamilselvan[3], G.Ramesh[4]

[1]Assistant Professor, [2] Professor, [4] Associate Professor Mechanical Engineering,

Mohamed Sathak A.J College of Engineering,

Chennai, Tamilnadu, India,

[3]Assistant Professor, Automobile Engineering, Bannari Amman Institute of Technology,

Sathyamangalam, Tamilnadu, India.

[1*Corresponding Author] deepakraja888@gmail.com ,tamil.selvanpoy@gmail.com

ABSTRACT:

The small and medium scale automobile components manufacturing industries are the essential sector, which produces huge number of automobile components to major automobile industries. A large scale automobile industries are using advanced quality management systems through this, they can able to identify and solve those problems. But small and medium scale industries are struggling to achieve the target quantity and desired quality. In this scenario, the small scale industries are looking for a unique methodology which can sort out what is the high priority problem to solve immediately. This paper proposes a unique tool i.e., Problem Selection Methodology (PSM) which is mainly focused on the most significant problem in the industry by using various lean tools.

Keywords: Problem Selection, High priority problems, Lean tools

INTRODUCTION:

The small scale industries are the backbone of large scale industries. They manufacture automobile components which will be supplied to large scale industries. So the small scale industries have the responsibilities to produce products at right quality and quantity. The company manufacturer's small plastic moulding components to major automobile manufacturers. Due to the continuous production (3 shifts), the machine needs some maintenance at periodical interval. But most of the industries are operating the machines continuously. This leads to minor and major quality issues. These issues may vary from acceptance level to high risk level.

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Mohamed Sathak A.J College of Engineering,

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THE WELD FORMATION STUDY ON FRICTION STIR WELDING OF

DISSIMILAR MAGNESIUM ALLOYS AZ31B AND ZM21

VIJAYAN SUNDARAVEL[1] & PRASATH. S[2]

[1]Associate Professor, Department of Mechanical Engineering, Sri Sivasubramaniya Nadar College of Engineering,
Kalavakkam, Chennai, India

[2]Associate Professor, Department of Mechanical Engineering, M.S.A.J. College of Engineering,
Chennai, Tamil Nadu, India

ABSTRACT

Friction stir welding is used to join the dissimilar magnesium alloys of AZ31B and ZM21. In this investigation the effect of friction stir welding process parameters on weld formation of dissimilar AZ31B and ZM21 magnesium alloy joints, were analysed. Two types of material flow patterns are seen in the friction stir welding process, namely pin-driven material flow and of the joints. The onion ring formation is also captured due to the transverse movement of the FSW tool. The basin type stir zone is observed with tunnel defect. Four different tool profile pins are used in this investigation and square tool profile pin yields better joint. The optimised FSW parameters areto be set at 1900 rpm, 25mm/min, and 3.6 KN in welding AZ31B and ZM21. The formation of defect-free FSW joints is a function of its process parameters is concluded from the macrostructure analysis.

KEYWORDS: Friction Stir Welding, Magnesium Alloys& Macrostructure Analysis

Original Article

INTRODUCTION

The thirst of new high specific strength structural materials is highly needed in structural and transportation industries. A material which withstands load as well as it should be less in weight is required in the current scenario. Magnesium alloys are emerging as important engineering materials, especially used in aerospace and automobile sectors, due to it slow density, high strength-to-weight ratio, high damping capacity and recyclability. The solid-state friction stir welding (FSW) process is used to avoid the drawbacks of the fusion welding process like hot cracking, porosity, solidification problems etc., as the welding joint is done just above the recrystallisation temperature of the base material. L.E Murr (2009) has reviewed and summarized the FSW of more than 25 materials and different dissimilar combination. The experimental investigations on FSW joining of dissimilar AZ31B & ZM21 Mg alloys and the effect of friction stir welding process parameters on weld formation are limited. In this investigation an attempt is made to study the effects of FSW process parameters in the formation of defect at different weld zones of the joint.

METHODOLOGY

Experimental Procedure

The chemical composition and the mechanical properties of the base metal were analysed and it is listed in the table 1. The FSW tool with four different tool pin profile (Hexagonal, Square, Left hand threaded and Tapered Cylindrical) were fabricated on M2 steel and it is subjected a heat treatment process to enhance the

EMBEDDED PREPAID ENERGY METER SYSTEM TO CONTROL ELECTRICITY

Mohammed Ibrahim Hussain[1], Dr. S. Sivasubramanian[2]
[1,2]CSE Department, Mohamed Sathak A.J College of Engineering

Abstract—Energy is the most basic utility required and so monitoring and controlling of energy consumption is a major priority and doing this starting at the domestic level is the best solution. The Existing domestic Energy meter reading systems universally exist many problems. Thus a smart meter is proposed based on the wireless technology internet of things. The proposed smart energy meter system for home management makes use a raspberry pi processor. The voltage and current sensor measures the current and voltage consumed by the load and is fed to the microcontroller for calculating the power consumed. This value is then sent to the central server for electricity bill calculation through the internet and also the same is displayed in a monitor at home at regular intervals. Displaying the energy consumed creates awareness about the amount of energy used by the user and enables him to analyze and reduce the energy used.

Keywords—Energy Meter, Monitoring, Controlling, Internet of Things, Energy Consumed

I.   INTRODUCTION

Electricity theft has emerged as a serious problem in power sectors especially in the developing countries. A huge amount of revenue is lost due to electricity theft. In some countries this is so severe that governments are incurring losses instead of revenue. In some cases government has to provide subsidies to the power sector to maintain a reasonable price of electricity. The financial loss results in shortage of funds for investments to expand the existing power capacity and as a result governments are failing to satisfy the ever increasing demand of electricity.

In some cases this problem has become so extreme that the affected power systems are near bankrupt. Power theft is a concerned issue even in the most efficient power systems like in USA and moderately efficient system like in Malaysia. However, in developing and under developed countries the practice of power theft is so common that it is often kept out of discussion.

Electricity theft includes tampering meters to show a low meter reading, stealing electricity bypassing a meter, billing irregularities and unpaid bills. Billing irregularities comprise inaccurate meter reading taken by bribed service man and intentional fixing of the bill by office staffs in exchange of illicit payments from the consumer.

Different nontechnical and technical methods were proposed in the past to detect electricity pilfering. Nontechnical methods may include inspection of the customers with suspicious load profile. Although periodic inspection can substantially reduce theft, such measure requires large manpower and huge labor. Such effort also fails in most cases due to the dishonesty of the staffs.

Some of the technical ways to detect pilferage are use of central observer meter at secondary terminals of distribution transformer, harmonic generator, genetic support vector machines, extreme learning machine, and power line impedance technique. However, these technical approaches can be

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TRACKING AND DETECTION OF AUTOMATIC VEHICLE LOCKING MECHANISM FOR NEGLIGENCE OF INSURANCE PAYMENT

Suganthi, I.S.[1], Jayanthi, E.[1], Piriyadarshini, S.[1] and Sabithabanu, K.[1]
[1]Assistant Professor
Department of Electronics and Communication Engineering,
Mohammed Sathak A.J College Of Engineering, Chennai-603 103,Tamil Nadu, India
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sabirahila@gmail.com

Abstract:

An embedded system is a special-purpose computer system designed to perform a dedicated function. Unlike a general-purpose computer, such as a personal computer, an embedded system performs one or a few pre-defined tasks, usually with very specific requirements. Since the system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product. As the technology develops, security becomes a major concern. The security not only means securing the important things but also the data's. Nowadays we hear of problems for tracking the vehicles in the bus stops, for particular vehicles. We may also be one of the victims of that issue. So we here use a simpler technique to track the vehicle. This method can find vehicles without paying insurance.

Keywords: *Vehicle Detection; Tracking System*

Introduction

The main objective of this project is to make the person to pay his insurance on time, else the vehicle will be automatically locked using Locking Mechanism.

Existing System: Existing system of this project is nothing but it's just the documentation of the particular person. When the person failed to pay his insurance, at the time the agent will call the person he will intimate about the insurance, and also no automatic detection system for license and helmat.

Disadvantages

* Easy to escape
* People can easily forget his insurance in his busy schedule
* Not trustable

Proposed System: In proposed system, microcontroller will help to pay the insurance. The process is when the person fails to pay the insurance amount then the agent sends the warning message to the person and the microcontroller will display the intimation message by using GSM. When GSM receives the intimation message, microcontroller will glow the LED light and LCD will display the intimation message, and buzzer will alarm. If the person failed to pay the insurance when the microcontroller will off the vehicle using locking mechanism.

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TRACKING AND DETECTION OF AUTOMATIC VEHICLE LOCKING MECHANISM FOR NEGLIGENCE OF INSURANCE PAYMENT

Suganthi, I.S.[1], Jayanthi, E.[1], Piriyadarshini, S.[1] and Sabithabanu, K.[1]

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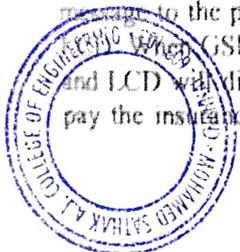❖ People can easily forget his insurance in his busy schedule
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RED LESION DETECTION USING DYNAMIC SHAPE FETURES FOR RETINAL IMAGES

Raja, J.,[1] Karthick, C.[1] and Dhiravida Chelvi, E.[2]

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Department of Electronics and Communication Engineering
Mohamed Sathak A. J. College of Engineering, Chennai-603103, Tamil Nadu,India
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Abstract

Diabetic retinopathy does not show any symptom of the disease till the person is fully affected with it. The fundus of the eye opposite the lens and includes the retina, optic disc, macula and fovea and the posterior pole. This eye fundus must be examined periodically by ophthalmoscope or fundus photography. This fundus examination can easily denote any changes in the retina due to the very less number of ophthalmologists some automated screening process is need to be developed in order to cover all the diabetes affected people. Automatic telemedicine system for computer-aided screening and grading of diabetic retinopathy depends on detection of retinal lesions in fundus pictures, a complete unique technique for automatic detection of each micro aneurysms and haemorrhages in colour fundus pictures is delineated and valid. The most contribution is a new set of form options, known as Dynamic form options, that don't need precise segmentation of the regions to be classified. These options represent the evolution of the form during image flooding and permit to discriminate between lesions and vessel segments. It proves to be strong with relevance variability in image resolution, quality and acquisition system.

Keywords: *retinal images, red lesion detection, diabetic retinopathy*

Introduction

Diabetic retinopathy (DR) is a complication of diabetes that can lead to impairment of vision and even blindness. It is the most common cause of blindness in the working-age population. One out of three diabetic people presents signs of DR and one out of ten suffers from its most severe and vision-threatening forms. DR can be managed using available treatments, which are effective if diagnosed early. Since DR is asymptomatic until late in the disease process, regular eye fundus examination is necessary to monitor any changes in the retina. With the increasing prevalence of diabetes and the aging population, it is expected that, in 2025, 333 millions diabetic patients worldwide will require retinal examination each year. Considering the limited number of ophthalmologists, there is an urgent need for automation in the screening process in order to cover the large diabetic population while reducing the clinical burden on retina specialists. Automation can be achieved at two levels: first, in detecting cases with DR, and, second, in grading these cases. Indeed, the identification of the severity level, through DR grading, allows more appropriate and consistent referral to treatment centres. Our research focuses on the development of an automatic telemedicine system for computer-aided screening and grading of DR. Since computer analysis cannot replace the clinician, the system aims at

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FPGA BASED IMAGE ACQUISITION AND PROCESSING SYSTEM BASED ON ARM

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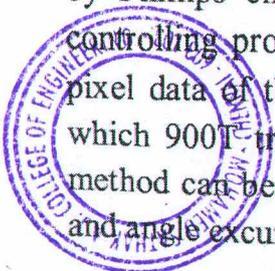Email:ece.priyadharshini@msajce-edu.in

Abstract

The research purpose of this paper is to build a platform for image processing, which can be used to minimize and intelligentize the video image processing system, and make it applicable in various and complicated situations. During the design, related data in broad area has been searched, video processing systems of various engineering vehicles are used as reference, the merits and demerits of different methods are analyzed, then the FPGA-based program is chosen. FPGA-based image acquisition PCB is designed in this paper, the working mode is configured and the acquisition controlling module is programmed. Under the control of the controlling module, image data is stored in SRAM correctly. An arm module is also designed according to ARM theory and timing relation, which is used for the reading of image data and fitness algorithm of the road mark line. Finally the complete program of the video tracking system used for the 900T transporting girder vehicle is programmed. The above research validated that this system is totally qualified for large-scale engineering vehicles' video surveillance and safety precaution, which can be used in various engineering vehicles' controlling system, and has a broad prospect.

Keywords: *FPGA; Image Acquisition; ARM*

Introduction

With the rapid development the modern transport, the construction of the highway bridge becomes more and more frequent. In the construction, a very important link is applying transporting girder vehicle to ship the bridge or the rail. Because the self-contained quality of transporting girder vehicle is very large, it must not exceed the scope of the provisions of the baseline when the vehicle is traveling on the finished rail girder, otherwise the security and the rail girder are not allowed. At present, the drivers are basically relying on their own driving skills and feel to control the vehicle, and a slight mistake may cause an accident1-2. Therefore, to design a road video tracking system, to be able to meet the field operation need as well as portable is of great practical significance. In this paper, the input signal is gathered by Phillips chip called SAA7113 the time sequence is controlled by FPGA while the controlling program controlled by ARM. The video tracking is realized by comparing the pixel data of the two frames3. During the algorithm programming process, if the road, on which 900T transporting girder vehicle is driven, has a mark line, the straight line mode method can be used to recognize the mark line in a near view. Then the position excursion and angle excursion are yielded according to the straight line parameters.

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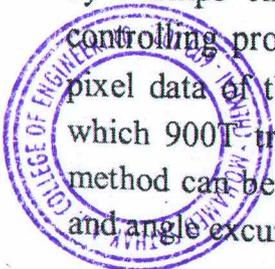
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LOCATION DETECTION AND USER AUTHENTICATION FOR SECURED ATM BY USING OTP

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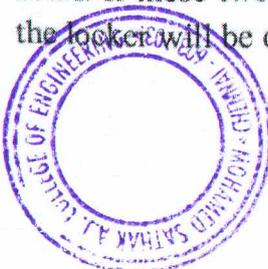
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Thieves smash and grab the lighter, less secure and free-standing units, or pop they open to grab the cash box for later dissection. Physical restraints help, but technology now provides electronic locks to protect the machines from those who would steal cash boxes.

The main purpose of this paper is to implement a locker system with high security based on random password and open CV technology which can be organized in ATM cashbox vehicles where high security is required. After that pattern confirmation of open CV the person receive the password to the microcontroller, which will verify the passwords entered by the key board. If these two passwords received from authenticated mobile phone are matched the locker will be opened otherwise it will remain close.

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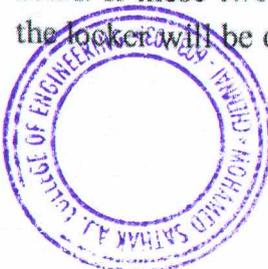
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