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This is certified that Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year.

Year	2022	2021	2020	2019	2018
Number of proceedings	84	18	32	29	13
Total					176

Certified Document from page No.1 to 38

NITIN KRISHNARAO CHOUDHARI

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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year.

For Year 2020				
Sr. No	**Name of the Teacher**	**Title of the Paper**	**Title of the Book/Chapters Published/ Title of The Proceedings of The Conference**	**ISBN NO.**
1	Prof. K.V. Madurwar	Bearing Capacity of Foundation Review	Bearing Capacity of Foundation Review	2320-2882
2	Mr.R.K.Bhoyar	Studies On Mechanical Behavior Of Sisal Fibre And Human Hair Hybrid Sandwich Composite	Studies On Mechanical Behavior Of Sisal Fibre And Human Hair Hybrid Sandwich Composite	2395-0056
3	Dr.R.K.Pohane	Design And Fabrication Of Corn Peeling Machine	Design And Fabrication Of Corn Peeling Machine	2395-566x
4	Ms. A.P. Thakre	A Review On Audible Sound Analysis Based On State Clustering Through Multiple Deep Neural Network Modeling	A Review On Audible Sound Analysis Based On State Clustering Through Multiple Deep Neural Network Modeling	2395-0056
5	Mrs. S.V.Borkar	Design And Fabrication Of Smart Braking System	Design And Fabrication Of Smart Braking System	2395-0056
6	Mrs. S.V.Borkar	Design And Development Of Vapour Compression Refrigeration System Using	Design And Development Of Vapour Compression Refrigeration System Using Liquid Heat Exchanger	2395-0056

		Liquid Heat Exchanger		
7	M.R. Moroliya	Optimization Of Operational Methods To Improve Sustainable Energy Efficiency Of Auxiliaries In A Cfbc Cola Fired Boiler.	Optimization Of Operational Methods To Improve Sustainable Energy Efficiency Of Auxiliaries In A Cfbc Cola Fired Boiler.	2394-4099
8	M.R. Moroliya	Design And Fabrication Of Solar Water Heater With Cpc By Using Wafers Packet	Design And Fabrication Of Solar Water Heater With Cpc By Using Wafers Packet	2277-3878
9	Prof. A.D.Anjikar	A Review: Application Of Mechanical Monster In Era	A Review: Application Of Mechanical Monster In Era	2581-9429
10	Mr.A.D.Anjikar	Fabrication & Theorectical Concept Of Smart Farming With The Help Of Scare Crow	Fabrication & Theorectical Concept Of Smart Farming With The Help Of Scare Crow	2321-0613
11	Mr.S.V.Kale	Design Of Trademill Cycle	Design Of Trademill Cycle	2321-0613
12	Ms.Shubhangi Gurway	A Comprehensive Approach In Designing A Mechanism In	A Comprehensive Approach In Designing A Mechanism In	
13	Mr.K N Hande	Analysis Of Implementing Network Intrusion Detection Algorithm Using Machine Learning	Analysis Of Implementing Network Intrusion Detection Algorithm Using Machine Learning	2582-1008
14	Mr.D.B.Khadse	Customized Software	Customized Software Development For Stock	2582-3930

		Development For Stock Maintainance And Billing System	Maintainance And Billing System	
15	Mr.D.B.Khadse	AI Based Headgear For Military Safety	AI Based Headgear For Military Safety	2582-3930
16	Mr.D.B.Khadse	Gram panchayat On Your Fingertips	Gram panchayat On Your Fingertips	2582-3930
17	Mr.D.V.Jamthe	IOT Based Moveable Robotic Arm	IOT Based Moveable Robotic Arm	2582-3930
18	Mr.D.V.Jamthe	Augmented Reality For Real Estate Advertisement	Augmented Reality For Real Estate Advertisement	2582-3930
19	Ms.A.A.Nikose	Feature Extraction Of Satellite Image Using Machine Learning	Feature Extraction Of Satellite Image Using Machine Learning	2582-3930
20	Ms.A.A.Nikose	Data Mining Using Dynamic Query Form Technique	Data Mining Using Dynamic Query Form Technique	2582-3930
21	Mr.V.P.Gaikwad	Line Follower Carrier Bot	Line Follower Carrier Bot	2582-3930
22	Dr.(Ms) D.M.Kate	Blind Watermarking Technique Using Redundant Wavelet Transform For Copyright Protection	Blind Watermarking Technique Using Redundant Wavelet Transform For Copyright Protection	2395-0056
23	Dr.(Ms) D.M.Kate	Illumination And Colour Classification Method To Detect Digital Image Forgeries	Illumination And Colour Classification Method To Detect Digital Image Forgeries	2320-2882
24	Dr.(Ms) D.M.Kate	A Systematic Observation In Digital Image Forgery Detection	A Systematic Observation In Digital Image Forgery Detection Using Matlab	2395-0056

		Using Matlab		
25	Dr.(Ms) D.M.Kate	Food Dispensary Customization As Per User	Food Dispensary Customization As Per User	2708-2792
26	Dr. P.R. Bokde	Robust & Fast Detection Of Moving Vehicles In Aerial Videos Using Sliding Windows In Matlab	Robust & Fast Detection Of Moving Vehicles In Aerial Videos Using Sliding Windows In Matlab	2320-2882
27	Mr.K.N.Hande	Role Of Machine Learning And Deep Learning Approaches In Designing Network Intrusion Detection System	Role Of Machine Learning And Deep Learning Approaches In Designing Network Intrusion Detection System	978-981-33-6306-9
28	Dr S.B.Dhoble	Design Of Low Complexity Channel Estimation & Reduced Ber In 5g Massive Mimo Ofdm System	Design Of Low Complexity Channel Estimation & Reduced Ber In 5g Massive Mimo Ofdm System	2320-2882
29	Dr S.B.Dhoble	Design Of Low Complexity Channel Estimation And Reduced Ber In 5g Massive Mimo Ofdm System	Design Of Low Complexity Channel Estimation And Reduced Ber In 5g Massive Mimo Ofdm System	2395-0056
30	Ms.A.P. Thakare	A Review On Audible Sound Analysis Based On State Clustering Through Multiple Deep Neural Network Modelling	A Review On Audible Sound Analysis Based On State Clustering Through Multiple Deep Neural Network Modelling	2395-0056
31	Ms.A.P. Thakare	Audible Sound Analysis Based On	Audible Sound Analysis Based On State Clustering Through	2320-2882

		State Clustering Through Multiple Deep Neural Network Modeling	Multiple Deep Neural Network Modeling	
32	Dr. R. A. Pimple	Relationship Of NDVI With Crop Coefficient Of Wheat Obtained By Considering Different Methods Of Estimating Reference Evaporation	Relationship Of NDVI With Crop Coefficient Of Wheat Obtained By Considering Different Methods Of Estimating Reference Evaporation	0975-9107

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IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Bearing Capacity of Foundation: Review

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ABSTRACT – Bearing capacity is the most important aspect of the geotechnical engineering. The foremost requirement of any structure is safety and stability with achieving economy. So, to design any structure estimation of bearing capacity is compulsory. Several research works have been done in the last few decades for the estimation of ultimate bearing capacity of shallow foundations in cohesionless as well as cohesive soils through experimental studies on model footings and theoretical analyses. The objective of this paper is to present some of the rigorous works carried out so far using the above methods and to bring out the limitations of them.

Keywords: bearing, foundation.,raft

I. INTRODUCTION

All civil engineering structures whether they are buildings, dams, bridges etc. are built on soils. A foundation is required to transmit the load of the structure on a large area of soil. The foundation of the structure should be so designed that the soil below does not fail in shear nor there is the excessive settlement of the structure. The conventional method of foundation design is based on the concept of bearing capacity. Soil when stressed due to loading, tend to deform. The resistance to deformation of the soil depends upon factors like water content, bulk density, angle of internal friction and the manner in which load is applied on the soil. The maximum load per unit area which the soil or rock can carry without yielding or displacement is termed as the bearing capacity of soils. Soil properties like shear strength, density, permeability etc., affect the bearing capacity of soil. Dense sand will have more bearing capacity than loose sand as unit weight of dense sand is more than loose sand. If the bearing capacity of soil at shallow depth is sufficient to safely take the load of the structure, a shallow foundation is provided. Isolated footing, combined footing or strip footing are the option for the shallow foundation. Deep foundations are provided when soil immediately below the structure does not have the adequate bearing capacity. pile, piers or well are the options for deep foundations.

Foundation is the lower most hidden but very important part of any structure whether it is onshore or offshore structure. It is the part which receive huge amount of load from superstructure and distribute it to ground. So, the foundation should be strong enough to sustain the load of superstructure. The performance of a structure mostly depends on the performance of foundation. Since it is a very important part, so it should be designed properly. Design of foundation consists of two different parts: one is the ultimate bearing capacity of soil below foundation and second is the acceptable settlement that a footing can undergo without any adverse effect on superstructure. Ultimate bearing capacity means the load that the soil under the foundation can sustain before shear failure; while, settlement consideration involves estimation of the settlement caused by load from super structure which should not exceed the limiting value for the stability and function of the superstructure. Ultimate bearing capacity problem can be solved with the help of either analytical solution or experimental study. Bearing capacity of soil is simply strength of soil, technically it is defined as the capacity of soil to support the load applied to the ground. The bearing capacity of soil is the maximum average contact pressure between the foundation and soil which should not be produced shear failure in the soil. In geotechnical engineering, bearing capacity is the capacity of soil to support the loads applied to the ground. The bearing capacity of soil is the maximum average contact pressure between the foundation and the soil which should not produce shear failure in the soil. Ultimate bearing capacity is the theoretical maximum pressure which can be supported without failure; allowable bearing capacity is the ultimate bearing capacity divided by a factor of safety. Sometimes, on soft soil sites, large settlements may occur under loaded foundations without actual shear failure occurring; in such cases, the allowable bearing capacity is based on the maximum allowable settlement. A foundation is the part of a structure which transmits the weight of the structure to the ground. All structures constructed on land are supported on foundations. A foundation is a connecting link between the structure proper and the ground which supports it. All civil engineering structures whether they are buildings, dams, bridges etc. are built on soils. A foundation is required to transmit the load of the structure on a large area of soil. The foundation of the structure should be so designed that the soil below does not fail in shear nor there is the excessive settlement of the structure. The conventional method of foundation design is based on the concept of bearing capacity.

Soil when stressed due to loading, tend to deform. The resistance to deformation of the soil depends upon factors like water content, bulk density, angle of internal friction and the manner in which load is applied on the soil. The maximum load per unit area which the soil or rock can carry without yielding or displacement is termed as the bearing capacity of soils.

Soil properties like shear strength, density, permeability etc., affect the bearing capacity of soil. Dense sand will have more bearing capacity than loose sand as unit weight of dense sand is more than loose sand.

Research on the ultimate bearing capacity problems can be carried out using either analytical solutions or experimental investigations. The former could be studied through theory of plasticity or finite element analysis, while the latter is achieved through conducting prototype, model and full-scale tests. A satisfactory solution is found only when theoretical results agree with those obtained experimentally. A literature survey on the subject shows that the majority of the bearing capacity theories

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 05 | May 2020 www.irjet.net p-ISSN: 2395-0072

Studies on Mechanical Behavior of Sisal Fiber and Human Hair Hybrid Sandwich Composites

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Abstract - - Recently, due to growing environmental impact that are associated with production, disposal and recycling of synthetic fiber based polymer composites that are triggered the development if eco-friendly composite for various applications mainly in automotive ,marine, chemical ,infrastructure, sporting goods etc. Almost there are various types of fibers kenaf, jute,oil palm, cotton, banana, hemp and sisal. Sisal will play a key role to fabricated a varied range of structural and non –structural industrial products with different polymer matrix.

Also, Hairs is discarded material for our society and easily available in municipal waste, homes etc and available in bulk amount of volume is found in dump/waste streams due to slow degradation. So it is better to develop the approach for utilizations this waste as resources or raw material. Composites are very common and light weighted materials and so its application could be found almost everywhere with different reinforced materials. Hence, this paper presents a review on mechanical properties of sisal-human hairs fiber reinforced polymer composites.

Key Words: sisal fiber, human hair, epoxy resin, polyester resin, composite.

1. INTRODUCTION

There is a growing importance for the green products that are biodegradable in the field of composites that has narrowed the use of synthetic materials in various engineering applications. Demand of polymer based natural fiber reinforced composites has increased dramatically in recent years. For now various types of natural fibers like (wood, cotton, sisal, flex, leaf fibers ,bamboo and hairs etc) are used in development of reinforced composites. Synthetic fiber reinforced composites (SFC) have outstanding mechanical properties in comparison with the Natural fiber reinforced composites (NFC). However, limitations of synthetic fibers due to their non –degradability involves disposal, recycling and environmental impact leads immense pollution to the surrounding environment which are the matter of concern for the government and researchers. In addition to the ecological perspective , the suitability of biodegradable polymers and natural fibers for many applications has increased their demand .Hence, various industrial sectors are focusing on employment of environmentally friendly products .In order to obtain low cost, easily disposable, Research and engineering interest has been shifting form huge materials to Natural Fiber reinforced polymeric materials .In all many authors have reported the mechanical properties of natural fiber reinforced composites .But less efforts have been focused on Natural hybrid fiber reinforced polymers. So this paper provides overview of natural sisal -Human Hair fiber reinforced polymers.

1.1 SISAL FIBER

Sisal fiber is extracted from the leaves of sisal plant (Agave Sisalana),which is currently found in Orissa ,Bihar, Maharashtra, West Bengal.About 275 species are distributed in tropical region of India .Sisal can be easily cultivated in short plantation time. These plant grows naturally in the hedges of field and railway tracks .A study illustrated that around 4.5million tons per year sisal fiber are extracted throughout the world. Sisal fiber extracted from leaves is classified into three types: Mechanical, Ribbon and Xylem. Leaves are crushed and beaten by rotating wheel set with blunt knives, so that only fibers remain .The other parts of leaf are washed away by water and dried under the Sun naturally so that the moisture content in it is removed as the fiber quality depends upon moisture content, so proper drying is important. And to get good quality artificially drying is done and the optimum moisture content for best quality is 13.5%. After that fibers are combined and machined on basis of sizes and groups.

Fig-1: Raw Sisal fiber

International Journal of Scientific Research & Engineering Trends
Volume 6, Issue 3, May-June-2020, ISSN (Online): 2395-566X

Design and Fabrication of Corn Peeling and Cutter Machine

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Abstract – There are many maize threshing techniques in India which are used in day to day life. Maize is world's largest resourceful seed crop. The techniques used to separate seed in old days are removing the leaf by hand or by chopping the corn by wooden rod. The main problems with these machines are that they are not affordable to farmers who are having less acreage farms and which they do not require these big threshing machines. Also, in this process the kernels were getting damaged and the rate of production was less. Many farmers in India are not affordable to use these machine system can be established these machine provides simple mechanical design. The existing machine of corn de-seeding in agriculture industry consist of separation of grains only. But for making the past of corn another machine is required which is not affordable for farmers.so in this concept by keeping these things in mind we design the new concept which consist of three operation like seed separation, seed paste and cob crushing in single assembly. In this concept there is no need of any extra attachment. The concept model of machine was made by using AutoCAD software and required calculation were made .After freezing concept, later it was converted into 3D model using CATIA-software.

The fabrication of model was done and test was conducted.

***Keywords* – corn, peeling, cutter, combo.**

I. INTRODUCTION

1.in India, corn is one of the most important crop and it has a source of large number of industrial products beside its use as human food and animal feed. Corn is also versatile crop, allowing it to grow across a range of agro-ecological zones.Every part of corn can be used to produce a large verity of food and non-food products. India is presently is in need of technology in agriculture field the farmers need to do all the segregation processes manually which is hard task far as far them and also this increase the cost of final products. To overcome this problem of removing its outer sheath and de-husking the cobs this machine which is affordable by farmers has been developed. The machine is basically compromise of separate shelling chamber, collecting tray and motor (2HP). The arrangement of these parts is connected by belt and pulley mechanism.

Fig. 1. Actual fabricated model of corn peeling and cutter machine.

II. LITERATURE REVIEW

1. Anant J. Ghadi et al [1]: This paper focuses on various corn de-husking methods. The Aztecs and Mayans made processes to cook or grind the corn which is cultivated it in numerous verities throughout central and southern Mexico. Due to these processes the crop spread to rest of the world. In agriculture industry the existing methods of corn de-husking was done manually with help of hands or by using large machinery for deseeding. So methods are not effective for a developing economy countries where farmers have little money for investment like India.Hence there is need for innovative idea or product that is feasible, safe, cost effective and productive for the India farmers.

2. Anirudha G. Darudkar et al [2]: This paper focuses on lack of corn processing machine like corn Sheller is major problem of corn production. In short this paper describe about design of various components of corn Sheller machine. It involves the process of design different part of this shelling machine by considering forces and ergonomic factor of people. This project is mainly about generating a new concept of corn shell with simple mechanism to bring anywhere and easier to thresh corn. We are trying to make innovative idea in machine which is power

A Review on Audible Sound Analysis based on State Clustering through Multiple Deep Neural Network Modeling

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Abstract:- *Statistical parametric speech synthesis (SPSS) combines an acoustic model and a vectored to render speech given a text. Typically decision tree-clustered context-dependent hidden Markov models (HMMs) are employed as the acoustic model, which represent a relationship between linguistic and acoustic features. Recently, artificial neural network-based acoustic models, such as deep neural networks, mixture density networks, and long short-term memory recurrent neural networks (LSTM-RNNs), showed significant improvements over the HMM-based approach. This project reviews the progress of acoustic modeling in SPSS from the HMM to the LSTM-RNN. Understanding sound is one of the basic tasks that our brain performs. This can be broadly classified into Speech and Non-Speech sounds. We have noise robust speech recognition systems in place but there is still no general purpose acoustic scene classifier which can enable a computer to listen and interpret everyday sounds and take actions based on those like humans do, like moving out of the way when we listen to a horn or hear a dog barking behind us*

Keywords: *SPSS, HMM, LSTM-RNNs*

1. INTRODUCTION

The goal of text-to-speech (TTS) synthesis is to render a naturally sounding speech waveform given a text to be synthesized. Figure 1 outlines a human speech production process. A text (or concept) is first translated into movements of articulators and organs. Using air-flow from a lung, vocal source excitation signals containing periodic (by vocal cord vibration) and aperiodic (by turbulent noise) components are generated.

By filtering the source signals by time varying vocal tract transfer functions controlled by the articulators, their frequency characteristics are modulated. Finally, the filtered source signals are emitted. The aim of TTS is to mimic this process by computers in some way. Text-to-speech can be viewed as a sequence-to-sequence mapping problem; from a sequence of discrete symbols (text) to a real valued time series (waveform).

Typical TTS systems consist of text analysis and speech synthesis parts. The text analysis part includes a number of natural language processing (NLP) steps, such as word segmentation, text normalization, part-of-speech (POS) tagging, and grapheme-to-phoneme (G2P) conversion. This part performs a mapping from a sequence of discrete symbols to another sequence of discrete symbols (e.g., sequence of characters to sequence of words). The speech synthesis part performs mapping from a sequence of discrete symbols to real-valued time series.

It includes prosody prediction and speech waveform generation. The former and latter parts are often called “front-end” and “back-end” in TTS, respectively. Although both of them are important to achieve high-quality TTS systems, this paper focuses on the latter one. Statistical parametric speech synthesis (SPSS) is one of the major approaches in the back-end part. This approach uses an acoustic model to represent the relationship between linguistic and acoustic features and a vocoder to render a speech waveform given acoustic features. This approach offers various advantages over concatenative speech synthesis , which is another major approach in the text (concept) frequency transfer characteristics magnitude start--end fundamental frequency air flow Sound source voiced: pulse unvoiced: noise speech

Outline of speech production process. back-end part of TTS systems, such as small footprint and flexibility to change its voice characteristics However, the naturalness of the synthesized speech from SPSS is not as good as that of the best samples from concatenative speech synthesizers. Zen et al. reported three major factors that can degrade the naturalness quality of vocoder, accuracy of acoustic model, and effect of over smoothing. This paper addresses the accuracy of acoustic model. Although there have been many attempts to develop a more accurate acoustic model for SPSS], the hidden Markov model (HMM) is the most popular one. Statistical parametric speech synthesis with HMMs is known as HMM-based speech synthesis Inspired from the success in machine learning and automatic speech recognition, 5 different types of artificial neural network based acoustic models were proposed in 2013.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 03 | Mar 2020 www.irjet.net p-ISSN: 2395-0072

Design and Fabrication of Smart Braking System

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Abstract - *The purpose of the paper is to Design Smart hand braking system is to reduce the chances of accidents on the road. The paper gives you the detail about the parts and working of the smart braking system for long time by reducing collision of vehicles, which can adversely affect the safety and its assurance of quality. By accomplishing the aim of the project everyone can drive safely also which can be easily acceptable in the market. If the parking brake content is present manually in the braking system then it is not suitable for safe drive and further process. If the driver have lot of hectic driving schedule then it can increase the chances of accidents because of his tiredness. This paper gives the solution for the limitation of manually operating hand braking system or manually operated parking brake system which is time consuming process or operation. The parking brake or hand brake is a conventional method to apply the parking brake, as it takes much time, more space and more efforts. At the very start, When the vehicle is started or ignition is ON, This sends a signal to the control unit such that it reverse the high torque motor and parking brake will get remove. High torque motor releases automatically When the engine ignition is off, the motor works in the reverse direction to lock the hand brake. whenever driver will get distracted or sleep during the driving the sensor senses the distance between two vehicle and give one buzzer sound for the driver when the vehicle is too close And Similarly vehicle will get slow down.*

Key Words:- High Torque Motor, E.C.U(Microcontroller), Ignition, Battery, Brake Cable, Sensor.

1. INTRODUCTION

In road vehicles, the emergency and place on referred to as a emergency or emergency could even be a mechanism accustomed keep the vehicle firmly static once set. historically, it had been place on accustomed facilitate perform associate emergency stop have to be compelled to the foremost hydraulic brakes fail. Parking brakes generally contains a cable connected to two wheel brakes, that's then connected to a pull mechanism. In most vehicles, the emergency operates alone on the rear wheels, that have reduced traction whereas braking. The mechanism is also a manual lever, a straight pull handle located on the aim of the steering column or a foot-operated pedal located with the alternative pedals.

As safety rules became exacting inside the 19 Eighties, trendy and stylish and classy brake systems became further reliable fashionable brakes not cause emergencies in ancient contexts; a brake red light-weight appears on the dashboard if there was a problem. it isn't as necessary for a driver to use this brake for emergencies, if it were to be used, the emergency lever have to be compelled to be slowly engaged to help shrink speed.

In manual and transmission vehicles, the emergency can also be used for numerous driving things that require the vehicle to be momentarily stopped. as associate example, the brake unit aiming to be engaged once moving off associate uphill slope, as this allows the thrust to hold the accelerator and clutch pedals steady whereas not the vehicle rolling backwards. various common things is once the vehicle is stopped at a stoplight, a path, or simply waiting to purpose before oncoming traffic. The emergency would certify the automotive is secure, have to be compelled to another vehicle get physical contact from behind, inflicting the automotive to jolt forward. it isn't urged to use the emergency once the vehicle is in-motion, unless there is a agent with the foremost brakes, as this might lock the rear wheels and cause a skid. this will be referred to as a handbrake flip, that's usually performed in street athletics and cross-country rally athletics to initiate rear wheel drift

In vehicles with rear disc brakes, the emergency brake either actuates the disc calipers or a tiny low hydraulic brakes housed within the hub assembly Hudson cars used degree uncommon hybrid hydraulic-mechanical dual-brake system that operated the rear brakes through the otherwise typical mechanical emergency brake system once a failure of the mechanism allowed the pedal to travel on the so much facet its ancient limit. A number of production vehicles, light-weight and medium duty trucks, and motor homes are created with a separate hydraulic brakes on the driveline; mentioned as a transmission brake.

This features a and of being totally freelance of other braking systems. typically this can be often effective once there unit of measurement multiple driving axles, all driven wheels unit of measurement braked directly. A line lock is also a brief emergency brake that produces use of the vehicles customary hydraulic brakes. they are usually used for off road conditions or once stopping on steep grades is required. By trappings hydraulic pressure among the brake lines, all four wheels is barred.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 03 | Mar 2020 www.irjet.net p-ISSN: 2395-0072

DESIGN AND DEVELOPMENT OF VAPOUR COMPRESSION REFRIGERATION SYSTEM USING LIQUID HEAT EXCHANGER

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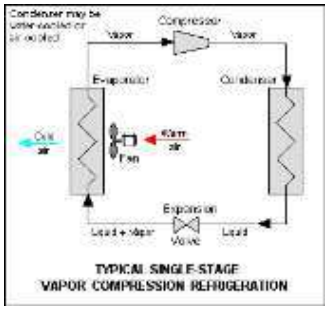
Abstract - *In recognition to the increasing effect of existing refrigerants & Vapour Compression Refrigeration System(V.C.R.S.) which uses it,their is a need to change the system and refrigerants to reduce the Global Warming Potential(GWP) & Ozone Depletion Potential(ODP),along with this it will also has to increase the C.O.P. of the system.So in our project we use the Liquid Heat Exchanger & take the blend of R600a and R290 as the refrigerant and another refrigerant HFO-1234yf and calculate the COP of the system and found that in both cases the coefficient of performance(COP) of the system will increase and GWP & ODP was reduced as compared to the existing V.C.R.S. system and currently used refrigerant R134a.By using the Liquid Heat Exchanger we are able to reduce the load on compressor so as to get the more and more cooling effect with minimum input and less harm to the environment. Through this project, we are able to reduce the Global Warming Potential(GWP) i.e.,4 which is nearly 1300 in case of R134a and the Ozone Depletion Potential(ODP) was already zero.So we successfully fabricate and test the Vapour Compression Refrigeration System using Liquid Heat Exchanger with the reduction in the Environmental pollution and the improved COP of the system.*

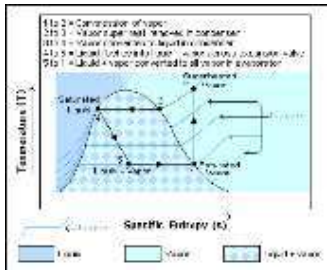
Key Words: Refrigerants, V.C.R.S., liquid Heat Exchanger, Global Warming Potential, Ozone Depletion Potential…

1.INTRODUCTION

Refrigeration is the process of cooling a space, substance, or system to lower and/or maintain its temperature below the ambient one (while the removed heat is rejected at a higher temperature). In other words, refrigeration means artificial (human-made) cooling. Heat is removed from a low-temperature reservoir and transferred to a high-temperature reservoir. Refrigeration has had a large impact on industry, lifestyle, agriculture, and settlement patterns.

1.1 Vapor-compression cycle





The vapor-compression cycle is used in most household refrigerators as well as in many large commercial and industrial refrigeration systems. Figure 1 provides a schematic diagram of the components of a typical vapor-compression refrigeration system.

The thermodynamics of the cycle can be analyzed on a diagram as shown in Figure 2. In this cycle, a circulating refrigerant such as Freon enters the compressor as a vapor. From point 1 to point 2, the vapor is compressed at constant entropy and exits the compressor as a vapor at a higher temperature, but still below the vapor pressure at that temperature. From point 2 to point 3 and on to point 4, the vapor travels through the condenser which cools the vapor until it starts condensing, and then condenses the vapor into a liquid by removing additional heat at constant pressure and temperature. Between points 4 and 5, the liquid refrigerant goes through the expansion valve (also called a throttle valve) where its pressure abruptly decreases, causing flash evaporation and auto-refrigeration of, typically, less than half of the liquid.

International Journal of Engineering and Advanced Technology (IJEAT)
ISSN: 2249-8958 (Online), Volume-9 Issue-3, February 2020

Optimization of Operational Method to Improve Sustainable Energy Efficiency of Auxiliaries in a CFBC Coal Fired Boiler- Problem Statement and Probable Solution.

Manish R. Moroliya, Vinay Chandra Jha

Abstract: ***The thermal power station uses some amount of their generated power to be consumed by its auxiliary power requirements. The auxiliary power consumption in the country is around 8-9%. The auxiliary power consumption can be minimize by increasing the load factor, by operational optimization, applying advanced control techniques and energy efficient measures. By decreasing the auxiliary power extra power will be available at grid. Thus, the aim of the audit is to determine the potential areas for minimizing auxiliary power consumption by operational optimization and energy management policy to improve energy efficiency of auxiliaries. This study will give the basic understanding of energy management approach, energy efficiency and energy saving areas so as to achieve maximum plant efficiency resulting fuel saving. Boiler feed pump is one of the equipment in a power plant with the highest auxiliary consumption. The research is specifically targeted at the feed water system and its potential for obtaining considerable energy and cost savings.***

Keywords: energy audit, boiler feed pump, boiler auxiliary, differential pressure, drum level control, cfbc boiler.

I.INTRODUCTION

The audit deals with the Energy efficiency achieved through operation of boiler feed pump by means of scoop control in auto mode (DP method) during daily operation of the plant at varying load conditions. The scope of the audit covers the boiler feed pumps and the feed water system in each unit of the AMNEPL power plant. Boiler feed pump is one of the equipments in a power plant with the highest auxiliary consumption. Thus after the study on this audit the results showed that with automated operation of scoop by means of DP method provided considerable savings in auxiliary consumption. The drum with 1.8m inner diameter and 2.09m outer diameter is hung on front roof by two U-rods. Its central elevation is 71.65m. The size of membrane wall furnace is 16744×20700mm(D×W), being made up of φ66.7×8mm pipes with a 92mm joint interval and being welded together with flat steel. Lay platen SH on the top of high-heat-loaded furnace; the top of nose and the inside of horizontal flue duct are equipped with FSH and FRH in turn.

Revised Manuscript Received on February 05, 2020.

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The horizontal fuel duct is formed by winding upper back-wall water wall pipes. Back shaft walls are made up of enclosure wall SH, tail-shaft flue duct is divided into two parts by mid-board, foreside is laid PRH, rearward is laid PSH, and coiled economizer is laid under PRH and PSH.PSH and PRH are hanged by hanger tube of economizer's mid-header; economizer coiler hangs on economizer mid-header. Water-feeding heated by economizer runs into steam drum first, and then runs into four pieces concentrated sewer pipes after mixing with boiler water, finally leaded to front, rear and two sides' water wall lower header by launch connection tube. Steam-water mixture through water wall and water wall upper header is run into drum by drum-water wall connection tube, which is separated by steam-water separator to fulfill water circulation.

Steel structure erection and covering position should be finished. All high-tension bolts should be tightened and qualified. Boiler proper equipment should be checked as per drawings and regulations, and the exposed defects should be eliminated. All heating surface, pressure parts and accessories of boiler proper (such as buckstays, guiding devices etc.) should be installed as per drawing requirements (including header's inner checking and cleaning, pipes through ball, component alignment and connection working etc.). The pipelines and supports participating in Hydraulic test should be installed. Boiler proper pipelines for emptying, water draining, sampling, nitrogen filling, acid washing, meter controlling, chemical dosing, pollution discharge and de-superheated water have been connected to secondary valve. Pay more attention to heat expansion offset during pipeline erection. All weld craters included in Hydraulic test should be welded, visual inspected, heat treated, NDE (as stated sampling inspection rate) and qualified. All components welded on heating surface pipes or pressure part should be finished, such as fins, pins, sealing iron parts, preventing wear enclosures, insulation hook nails, valve hole seats and thermal detection parts and expansion joints etc.

II.EQUIPMENTS OF FEEDWATER SYSTEM

Table 2.1: Technical Specification of Boiler

Equipment Detail	Technical Specification	Parameters

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878, Volume-8 Issue-3, September 2019

Design and Fabrication of Solar Water Heater with CPC by using Wafers Packet

Manish R. Moroliya, Nishikant Z. Adkane, S.M. Pimpalgaonkar, G.M. Palatkar

Abstract: ***The objective of our project is to create a system which can heat water at maximum temperature and give more efficiency than the current system used in the market today for daily water heating purpose and also less costly which is the main factor. So we made a prototype system of less expensive material and another main material such as wafer packet which will absorbs more sunlight. The evacuated collector for natural circulation discharge through single ended water-in-glass evacuated tubes mounted over a diffuse reflector was also taken into consideration. Therefore, the concept of Compound Parabolic Collector (CPC) is used to heat the water and with a small aperture area as compared to other collectors is possible to achieve a maximum water temperature up-to 100°C. The system is of reasonable cost as compared to existing ones. Collector efficiency is nearly 65%, however if all the control about reflecting rays and insulation is used for reducing the heat loss may be efficiency increasable comparably.***

Keywords: compound parabolic collector, wafers packet, solar radiation, water heater, concentration ratio, Absorber flux.

I. INTRODUCTION

Solar Water Heater with Compound Parabolic Collector is used for heating water purpose. The working is beneficial than that of other solar water heater system which are costlier and less efficiency in heating water. Solar water heaters are of two types, Flat Plate Collector (FPC) and Evacuated Tube Collector (ETC). ETC systems are not being used commonly. It's effectively a long half cylinder concentrates solar energy to a glass tube and in water is passed through copper tube which is present inside it. The solar energy or specifically the UVA radiation in turns kills the harmful bacteria and raises the temperature of water. Electricity utilization can be reduced by using solar water heater. It's developed for low level communities. We design to create the system which absorbs more sunrays so we used chip packet as a material that was easily made and modular. It's made from effectively scrap material.

Manuscript published on 30 September 2019
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The simple design is constructed of a half cylinder with wafers packet as a reflecting material and a meter-and-a-half length of glass tube.

As the sun rays strikes the reflective material it is guided towards the water flowing through the glass. Therefore, more amounts of sun rays can be concentrated on the glass tube. The device can be attached to a water system making it more effective than the other method. The materials used for the system were cheap, light and accessible. The prototype system works as better than the high quality one and also a very cost effective solution.

II. CONSTRUCTION

The construction involves the following component

1. CPC
2. Solar Evacuated glass tube.
3. Tank
4. Copper tube and UPVC pipes for connection through which water will pass.

A. Compound Parabolic Collector

The compound parabolic concentrator is a non- focusing type collector. It is also called as Winston collector. Compound Parabolic Concentrators (CPCs) are so designed to concentrate sun rays, with desired angles. It forms a trough. In this case the solar radiations from all direction are reflected towards the receiver kept at the bottom. It collects both direct and diffused solar radiation with high acceptance angle. The concentration ratio achieved in this type of collector ranges from 3-7 these collectors require occasional sun tracking with seasonal variation. The receiver must have the high absorptivity for solar rays must be manufactured with more conductivity metals in order to conduct the absorbed heat into the heat transfer to fluid. The solar radiations are allowed by transparent insulated ideal cover to the reflector and receiver, having a low transmittance of thermal radiation and high transmittance of solar radiation from the receiver. Also, it must have high stability and minimum cost. The Solar concentrated reflectors must have the high reflectance. Its function is to concentrate on solar beam radiation on the receiver, which is located at the focus of the system.

IJARSCT
ISSN (Online) 2581-9429
ISSN (Print) 2581-XXXX
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 12, Issue 1, December 2020
Impact Factor: 4.819

A Review: Application of Mechanical Monster in Era of Agricultural Industry

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Abstract: In the Indian economy, agriculture plays a vital role. Over the last few decades, Indian agriculture has recorded good growth. Implementing new ideas in this field is very important, although a lot of work has been done in this area. The multipurpose farming robot is a fundamental and major agricultural machine for full yield. The traditional method of weeding, sowing seeds and spraying pesticides is a laborious procedure. In India, many farmers still use bullocks, horses, and buffalo for agricultural operations. In contrast to other countries around the world, this will not fulfil the need for agricultural energy requirements. We assume that human and animal efforts can be replaced from an economic point of view by some advanced mechanism that will be ideal for small-scale farmers. We are therefore designing this prototype and assume that it will fulfil all requirements and problems in real life. India is a country focused on agriculture in which 70% of individuals rely on the results of farming. But if we observe that with population growth the farm is spread among the family and because of this, farmers in India kept only two acres of farm on average. Economically, farmers are still very poor because they are unable to afford tractors and other expensive machinery, so they use conventional farming methods. So, we are designing this machinery that will fulfil all this need and solve the problem of labor.

I. INTRODUCTION

The foundation of India is agriculture. Paddy and Wheat is one of the latest agricultural goals in which there are still not many researchers and producers involved. There are some issues facing this area, such as how to optimize profit, how to improve efficiency and how to reduce costs. Two types of farm machinery are used in India, the manual method, and the mechanized type. The use of a hybrid interface between the power source and the work is involved in mechanization. Usually, this hybrid system converts motion, such as rotary to linear, or offers sufficient mechanical benefits such as velocity increase or decrease or leverage. Machinery used in farming or other agriculture is agricultural machinery. Mechanized agriculture is a method of using agricultural machinery to mechanize agricultural work, increasing the productivity of farm workers significantly. Driven machinery has replaced many farm jobs carried out by manual labor or working animals such as oxen, horses, and mules in modern times. Many examples of the use of implements, such as the hoe and the plough, are found in the entire history of agriculture. But since the Industrial Revolution, the ongoing integration of machines has allowed farming to become much less labor-intensive. The greatest advantage of automation is that labor is saved. However, resources and materials are also saved, and efficiency, accuracy and precision are increased. The essential stages in the field of agriculture are seed feeding, pesticide sprinkling and crop cutting. The production of multipurpose agricultural machinery would assist Indian farmers in rural areas and small farms. The cost of feeding seeds, sprinkling pesticides, and cutting crops in the field will be reduced and will help to lift the economic level of an Indian farmer.

Farmers today pay plenty of cash on machines that make it easier for them to minimize labor and increase crop yield. As one of the developments in the growth of agricultural machinery automation and intelligence in the twenty-first century, all types of agricultural robots are researched and developed in several countries to introduce a variety of agricultural production, such as selection, harvesting, weeding, pruning, planting, grafting, classification of agriculture, etc. and that they seem to gain step by step in the selection, harvesting, weeding, pruning, planting, grafting,

Fabrication & Theoretical Concept of Smart Farming with the Help of Scare Crow

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Abstract— A Robotic scare-crow using image processing system for crops protection from the birds using sensor image processing. The Image processing and Robotic are important role in the project. When birds enter in the farm eating crops the robotic scare-crow will kept in the farm it is connected to the image processing system. The image processing System detect or sense the birds enter in the farm give command to the motor and motor is on. The robotic scare-crow moves left and right sides on the bases of the command and a loudspeaker also kept for the audio voice by which birds are fly away crops are protection and farmer get relaxed by using this project.

Keywords: Industrial Identification; Bird Detection; MATLAB Image Processing

I. Introduction

Our domain is to detect birds in real time video with the help of web camera. In this with the help of „Image Processing" the image of birds will detect. Here first of all we should know how „Image Processing" works in real time video to detect the birds? The main of the system is to detect the birds if any in the every frame of the video on real time video streaming and when the same is detected the controller is triggered through the image processing system and thus informs the motor to turn on. The Robotic scare crow is based on the motor. When the birds enter in the farms the web camera is kept for real time video streaming which is display in our system. Our system will detect the birds in real time video which gives commands to the motor and motor will activate through which robotic scare moves thus birds fly away. The loudspeaker which is interface with system is work in synchronous with system with the help of the loudspeaker the birds will afraid by hearing the voice generate by the loudspeaker. We have used Image processing system to detect the birds easily in video streaming every frame of video to detect the image of birds which are programmed in system.

II. Real Time Capture Camera

In the initial condition whole setup is ready to perform through general camera video is continuously searching and streaming to the computer. We can take video from multiple source like CCTV, WEBCAM, live streaming videos from server etc.

III. Converts to Frames

The Viola-Jones object detection frame work is the first object detection frame work to provide competitive object detection rates in real- time proposed in 2001by Paul viola and Michel Jones. Although it can be trained to detect a Varity of object classes, it was motivated primarily by the problem of face detection. This algorithm implemented in open CV. The characteristics of Viola-Jones algorithm which make it good detection algorithm are:

A. Robust

Very high detection rate (true-positive rate) and very low false- positive rate always.

B. Real Time

For practical application at least two frames per second must be processed.

C. Bird Detection Only (Not Recognition)

The goal is to distinguish faces from non faces.

D. Computer Unit Video

At the computer unit video is converted into frames. Every frame is an image contains some information through MATLAB images processing is done over all frames. There are two types of feature color feature and texture feature, images contain these two features.

IV. Bird Detection

The system will be working on majority two blocks the one is training and the other is called testing. The main of the system is to detect the birds if any in the every frame of the video on real time video streaming and when the same is detected the controller is triggered through the image processing system and thus informs the motor to turn on. The motor is further equipped with the scare crow and hence the scarecrow moves and the loud speaker generates voice or audio signals that makes the birds fly away and thus protect our crops and increases the productivity. First of all we collect different data set of the birds and train them and make a data base of the same. The training procedure is carried out with the state of art algorithm SVM: support vector machine. After the successful completion of the training of different birds the resultant vector will be saved with .mat file in the matlab. The vector or the trained vector is taken as a reference in the testing phase and are used to predict the presence of the birds and hence testing of the same .And hence in the above mentioned manner using image processing birds can be detected scarecrow could be initiated and the birds could be feared to fly and hence crops could be saved.

V. Bird Point Feature Extraction

Through image processing colour and texture features is extracting and further testing finally capture frames (images) and training database are compared and predict the bird. At training duration several texture feature like big and small birds several birds and colour of same several birds are extracted and create database using extracted (bird) information.

Design and Fabrication of Treadmill Bicycle

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Abstract— In this project we can convert the traditional bicycle into the treadmill bicycle. The name treadmill bicycle itself indicates its meaning. We can add a treadmill like structure in between the two wheels of the bicycle. As we know the importance of exercising in day to days life and due to the lack of timing people are unable to give time for the exercise. So we had a solution over that problem so people can done exercise without losing their time. We can fabricate a bicycle on which your exercise can be done easily while covering shorter distances.

Keywords: Treadmill bicycle, Roller, Gear mechanism, chain drive, Motor, Battery, Exercising

I. INTRODUCTION

Everyone knows the importance of exercise in our life and no one can ignore this. Due to the busy schedule of human being and lack of timing people give less importance to the exercise which results that they are suffering with health issues in earlier age. Our next biggest problem is pollution cause due to fuels. So overcoming these problems we had a solution. We can fabricate a bicycle by which we can cover a shorter distances while performing exercise and it also generates power while performing exercise.

In this bicycle we can add a treadmill like structure in between two wheels of the bicycle. The treadmill like structure can be made by rollers and the PVC belt. When walker walks on the treadmill, the treadmill belt moves. Gear mechanism is attach to the last roller of the treadmill structure. When roller moves the gear mechanism also moves and it can transmit the rotary motion to the last wheels of the bicycle via a chain drive. On the other side of the wheel there is a motor attached with dynamo which can generates the power when rear wheel of the bicycle is move. We can operates this bicycle by manually or with the help of battery also as we can control the speed of the bicycle with the help of controller.

II. LITERATURE SURVEY

Design and fabrication of treadmill bicycle by Kirtish Bondre etc. :- In this research paper we have studied how to convert the traditional bicycle into the treadmill bicycle. The frame of the bicycle is placed in between two wheels of the bicycle. This project is actually helpful for designing the manual treadmill.

Design and fabrication of treadmill bicycle by Swapnali Ravikiran etc.:-This paper describes the working of bicycle. It is the type of bicycle in which rider walks on the rollers of treadmill and then treadmill start moving just like bicycle. The motion of the treadmill bicycle is fully depends upon the efforts applying by human. We can also call it as walking bicycle in multipurpose treadmill reciprocating pump is attach for pumping the water.

Experimental validation of the lateral namics of a bicycle on a treadmill by A.L. Schwab:- This paper describes the study of pollution faced by people in day todays life and give a solution over that. As we know pollution is the biggest problem. If we can use treadmill bicycle in place of regular bikes, we can minimize the pollution to some extent. It is cheaper in cost and can run without use of fuel. Another important task is to keep a person healthy and fit in todays busy schedule. So running on treadmill can burn the calories and keep person fit. Treadmill is cheaper in cost as compare to normal bikes which makes it more efficient.

Design of treadmill to generate electricity by using mechanical energy by Sourabh borchate, Amit gaikwad, Ajay jadhav & Prasad dhag:-Under this literature review we get to know the design procedure of power generation in manual treadmill. From the design specification we know we use different formulas in order to acquire safe design stress and strain.

A riview paper on concept and utility of treadmill by V.R.gandharvar etc.:- During this paper analysis we've studied that the concept of treadmill was generated for generating mechanical energy with the help of animals. First treadmill was introduced by ROMAN Empire for heavy loading like conveyor belt which today we used in industries. Reading above literature review we get the basic idea of treadmill. From this we get a new idea to design a model which is mobile.

III. PROBLEM STATEMENT

Treadmills are stationary workout machines placed at the gym. Peoples get bored while performing workout at the indoor machines without any exposure to the atmosphere. Now a day's people use their own vehicle for travelling to a shorter distances which causes pollution in the environment and causes the unnecessary wastage of fuel so we can give a solution over that. We can convert traditional bicycle into treadmill bicycle. By travelling this bicycle we can perform workout with exposure to the environment while covering shorter distances without causing any harm to the environment.

IV. WORKING METHODOLOGY

This project is designed for covering shorter distances. We know that people get bored while doing workout in gym without any exposure to the environment. And our next problem is people's busy schedule. people cannot get enough time for exercising while dealing with their work. So they can't give importance to the exercising which causes to their increasing health issues. This bicycle can run on human power so it doesn't cause any harm to the environment.

In this project we can convert conventional bicycle into treadmill bicycle. We can add treadmill like structure in between the two wheels of bicycle. The treadmill like structure can be made by placing rollers in between the frame of the bicycle. We can place the treadmill belt over that roller so rider can walk easily on the rollers. We can add

Journal of Advanced Research in Industrial Engineering

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A Comprehensive Approach in Designing a Mechanism in Processing Section of Chemical Processing Company

SHUBHANGI PURANCHAND GURWAY

Abstract

Many number of small scale industries were manufacturing different types of product in world wide. These small scale industries play 90 percent of role in overall activity and give the jobs facilities to the people. These industries faces many problems during manufacturing such as lack of resources, storage capacity, transportation, management and technical skills, increase lead time which directly affect their efficiency, lagging the performance and these problem need to be solve. The main objectives of this work are to perform a case study in RSA Industries. Pvt. Ltd situated in MIDC Hingna, Nagpur, finding out the related problems using root cause analysis which is one of the powerful tools of lean manufacturing and tries to solve the performance related issues. The work is related to find the common problems face by workers and employees. Similarly, designing and validation of some of the mechanism in the processing section of the company have been done using ansys software.

Full Text:

PDF

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Refbacks

There are currently no refbacks.

© IJARW | ISSN (O) - 2582-1008
June 2020 | Vol. 1 Issue. 12
www.ijarw.com

ANALYSIS OF IMPLEMENTING NETWORK INTRUSION DETECTION (NIDS) ALGORITHMS USING MACHINE LEARNING

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Priyadarshini Bhagwati College of Engg., Nagpur

ABSTRACT

Although advanced Machine Learning (ML) techniques have been adopted for detecting intruders, the attack remains a major Internet threat. The main objective of this project is to identify or detect attacks that have occurred on the network. Now the growth of social media will increase day by day. However, it is difficult to detect attacks. This project will dynamically identify the attack by analyzing information from the KDDCUP dataset.The naive bay classification algorithm is used to classify the data presented on the network.

Keyword: Network security , intrusion detection system , KDD dataset , network attack , machine learning

1. INTRODUCTION

In this article, we have proposed a web-based intrusion detection system using the machine learning approach. There are two types of machine learning techniques: supervised algorithm and unsupervised algorithm. The unsupervised algorithm takes unmarked data or input test data and detects malicious activity based on assumptions, but it is not applicable in many cases such as DoS attacks, interruptions or bad configuration, the supervised algorithm takes the data marked as sound and can detect a wide range of malicious activity and unmonitored anomalies cannot. The contribution of this work is to discover the different types of threats, vulnerabilities or cyberattacks by using the classification algorithm of naive Bayesians to classify the data presented on the network. The end report is generated based on normal attacks and events

1.1. Definition: intrusion detection system

An intrusion detection system is a system that monitors network traffic to detect any suspicious activity and issues alerts when such activity is discovered. While detection and reporting of anomalies is the primary function, some intrusion detection systems are capable of taking action when malicious activity or abnormal traffic is detected, including blocking traffic sent from suspicious IP addresses.

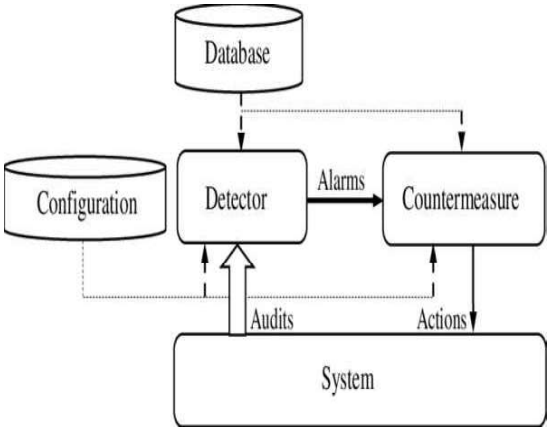

Figure1: Block diagram of basic intrusion detection system.

IDS can be classified into several ways and some of the classifications are:

1.1.1. Network and host based]:

In the network-based Intrusion Detection System (NIDS), each packet / stream on the network, whether inbound or outbound, is monitored by sniffing all packets arriving at the IDS interface. IDSs are strategically installed in multiple locations on the network, such as the Backbone / Core layer, the Distribution layer, and the Access layer. (HIDS), IDS programs instead of a network are installed on each system on the network.

1.1.2. Passive and active:

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 02 | Feb -2020 ISSN: 2582-3930

CUSTOMIZED SOFTWARE DEVELOPMENT FOR STOCK MAINTENANCE AND BILLING SYSTEM

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Abstract - Inventory Management system is software application used for maintaining the stock of the organization. This software can be implement in any organization such as Pharmacy shop, Computer shop, Retail shop etc. The Inventory management and Billing System is a software application which is desktop and mobile based application. This paper is categorized individual aspects for the sales and inventory management system. This system we have a tendency for finding completely different drawback moving to direct sales management and get purchase management. Inventory Management System is vital to confirm internal control in businesses that handle transactions partitioning around goods. A good inventory management system can alert the distributer once it's time to record. A customized Inventory Management System helps to minimize the errors while recording the stock. This paper aims at making a system that is efficient, simple and consists all the attainable techniques that an Inventory Management System needs. This paper helps to beat the paper billing system, human errors and time consumption used to maintain stock of a corporation. The application accommodates adding, deleting, updating, viewing and generating the invoice of the product consistent with business.

Key Words: Inventory Management System, Billing system, Invoice

1. INTRODUCTION

Inventory defines to product or material keep in associate in nursing physical space for business requirements. Inventory is the most essential part of the organization. Whenever any stock is received or sale by the organization they have to keep up the all the main points of the product. Every product has its own distinctive ID, price, model no. etc. which is troublesome. On alternate hand following of the product on paper is a challenging work for the organization. Inventory issues of too nice or too little quantities available will cause business failures. If a company experiences stock-out of an important point, production halts might result. The inventory management technique is additional helpful in verify the optimum level of inventory and finding answers to drawback of safety stock and time interval[1]. Inventory management has become extremely developed to satisfy the rising challenges in most company entities and this can be in response to the fact that inventory is associate plus of distinct feature.

This project Inventory Management System is a software base application designed on Tkinter using Python and SQL. The aim of the project is to make an Inventory Management System software which consist all the data associated with stock. The application comprises of Admin and User login which have totally different roles. The application consists all the fundamental information regarding the organization, for maintaining the stock. It conjointly offers the alert about the stock[2]. The Bill generated by the software is within the type of PDF in order that it will be save in logical type conjointly. Tkinter is Python module which is a commonplace. Tkinter interface to the interface toolkit. It is a built-in library used to create interface of application. SQL is a domain specific language that is used to manage and access the database. SQL has two main advantages:

1)Multiple record can be access in single command.

2)The need to specify the location of record is eliminated.

SQL consists of many types of sub languages:

- Data Query Language(DQL),
- Data Definition Language(DDL),
- Data Control Language(DCL),
- Data Manipulation Language(DML).

2. LITERATURE SURVEY

M.O. Yinyeh, S. Alhassan (2013) consistent with this paper managing inventories is challenging task for higher educational institution in Ghana. They bestowed Inventory Management system software which is efficient for managing stock supplies, stock issues and provide timely alert message and report.

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 02 | Feb -2020 ISSN: 2582-3930

AI Based Headgear for Military Safety

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Abstract - The purpose of this project is to create a helmet for the protection of the military people. This is a self security project which will keep the military person aware about his/her surrounding environment. The basic idea of the project is to detect the motion around the military person. If motion is detected the military person wearing the helmet will get an alarming message on the glass of the helmet. This project is based on Artificial intelligence. A camera is fixed on the helmet which is connected to the projector through Bluetooth. If the camera captures any motion in the surroundings of the military person, a caution message will be displayed on the glass of helmet which will be projected by the projector which if fixed on the helmet. So by this the military person will be aware of any kind of motion near him/her.

Key Words: AI, Arduino Nano, PCB, PIR sensor, V380 pro, OLED display

1. INTRODUCTION

The purpose of this project is to create a helmet for the protection of the military people. This is a self security project which will keep the military person aware about his/her surrounding environment.

The basic idea of the project is to detect the motion around the military person. If motion is detected the military person wearing the helmet will get an alarming message on the glass of the helmet.

This project is based on Artificial intelligence. A PIR Sensor is fixed on the helmet which is connected Arduino which is further connected to camera and OLED Display.

If the PIR Sensor captures any motion in the surroundings of the military person the camera will start capturing and a caution message will be displayed on the glass of helmet by OLED Display .So by this the military person will be aware.

Our ambitious project was to support our soldier to make them available with a new technology which will be easy to use and which will provide them information instantly on any movement around them self's with the help of PIR Sensor placed in their helmet, which further switches on the camera which will record the movement if any and the OLED display which will give notification instantly on glass screen.

A. Artificial Intelligence:

Artificial intelligence (AI) is an area of computer science which works in the creation of intelligent machines that work and reacts like humans. Some of the activities computers with artificial intelligence include:

- Speech recognition
- Learning
- Planning
- Problem solving

Artificial intelligence is a branch of computer science that aims to create intelligent machine which has become an essential part of the technology industry.

Programming computers for certain traits such as:

- Knowledge
- Reasoning
- Problem solving
- Perception
- Learning
- Planning
- Ability to manipulate and move objects

An artificial intelligence system must have a method to learn new data, storing it in the existing structure internally with minimal or no disturbance to them. It is the study of how to make computers do things which is at the moment people do better. This definition is ephemeral because of its reference to the current state of computer science. Also it fails to include some areas of potentially of very large impacts. that cannot now be solved by either computer or people, but it provide a good outline of what it constitute artificial intelligence, and it avoids the philosophical issues that dominate attempts to define the meaning of either artificial intelligence.

A person who knows how to perform tasks from several of the category learns the necessary skill in standard order.

B. AI tasks Domain

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 02 | Feb -2020 ISSN: 2582-3930

GRAMPANCHAYAT ON YOUR FINGERTIPS

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Abstract -In 2008, DEF (Digital Empowerment Foundation)initiated the 'Digital Panchayat' project in India, covering more than 1,00,0000 panchayats in various parts of country like all over the state in India like Karnataka, tamandua, Bihar, Panjab, Haryana, Maharashtra, etc. The objective of the project was to set an example to the governance and other stakeholders about how web-presence of gram panchayats can create enormous for digitally & Internet and break the barriers of digital divide. In 2010, the National Internet Exchange of India joined the initiative and the programmed was extended to 500-gram panchayats in 10 states. Today, the Digital Panchayat platform facilitates and improves day-to-day functioning of gram panchayats through two-way flow of information and content. Moreover, information on decisions taken at gram Sabha meetings get recorded and shared through gram panchayat websites. And other many more ways to share the contents. This enhances transparency as higher-level officials, and bureaucrats cannot change decisions at will be taken to that levels. This can be initially transmitted over globe.

Key Words:Gram panchayat, Android, sql, server, database, Digitalize, development, villagers, information, governance.

1.INTRODUCTION

In 2008, DEF initiated the 'Digital Panchayats' project in Maharashtra, covering 100 panchayats in various parts of Maharashtra. In India, there are more then 6,35000 Villages Which are Represented By 2,50,000 panchayats (Gram panchayat) Local Councils and More Then 3,00,000 Functionaries Councilors, which is an enormous number to that digit Represent over 70 percent of Population of India that lives in ruler part of the grass root of country. there is practically Democracy no Such governance System improve in these constituencies for governance. Development and information Sharing in Part of Region Chances are very low to reached out to the maximum Part of the Country. In Order to Address These issue Digital Empowerment Foundation (DEF) Which is Actively involved in The Government Facilities To reach its originally Functionalities to serve the citizens of the country Basically the DEF is working under the Government to fulfill the requirements of the situation.[2] The information and empowerment Ruler and grassroots communities by utilizing the power of ICT toll and Digital media found it necessary to tap panchayats and equip them with ICT tool and internet with the aim of empower panchayats digitally. The Digital gram panchayat project covering several parts of the above issue mentioned on it. To solve the above problem, introduce the ICT for the Ruler part for the country that is Digital Gram panchayat Which will help the citizen of the country from the ruler part to maximize the utilization of the facilities services offering from the government. basically, the initialization of the services to the ruler part of the country. Government need to recognize the panchayats over country so it will help serve the batter facilities to the citizens of the ruler part of the country. The Gram panchayat which is basically Digitalize from the government.

Following points or facilities covering this project:
To improve development, governance and public services delivery at panchayats level through information on dashboard/policy programs and implementation.

1. To Recognize every gram panchayat on the global mapping system which is Recognize by United Nation Also.

2. To Facilitate the growth of gram panchayat economically by proportioning the tourism and commercializing the gram/villages.

3. The digital gram panchayat is a basically a platform whereas the day-to-Day information is sharing over the nation can be possible through it. It is directly communicated the governance of thehead body.

2. LITERATURE SURVEY

Gram panchayat Zirad Official Android Application (Zirad, Alibag, Raigad, Maharashtra) Zirad Gram panchayat is a mobile application as per Digital India Campaign developed for Gram panchayat & Villagers of Zirad. It is a mere platform between villagers and Administration Zirad Android Application will provide all the information about your gram panchayat. DgGram is the first digital App which supports PMs Digital India Mission.

Shewalewadi App is developed for Gram panchayat & Villagers of Shewalewadi. It is a mere platform between villagers and Administration. Shewalewadi App will provide all the information about Official DgGram App (Shewalewadi,Haweli,Pune,Maharashtra). [4]

Ghotawade Grampanchayat Official DgGram App (Ghotawade,Mulshi,Pune,Maharashtra). Ghotawade App is developed for Grampanchayat & Villagers of Ghotawade. It is a mere platform between villagers and Administration

IoT Based Moveable Robotic Arm

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Abstract

The Internet of Things (IoT) is one of the most important field and is developing day by day. IoT means the connection or controlling of the hardware equipment using internet. Another interesting field is robotics. Robotics is used to develop machines that can be substituted for humans and their actions. Here in this project we are merging IoT with the robotics. Here the robot is controlled by IoT. The robot used here is the robot consisting of the wheels. Robot with wheels can be easily moved on smooth and hard surface, and it is more energy efficient than the legged robot. The basic objective of this robot is to pick and place an object from one place to another. This paper discusses about the pick and place moveable robotic arm which is controlled by Internet of Things.

***Keywords**: Microcontroller, IoT,ATmega328,HC-05,Arduino*

1.Introduction

This paper explains how to create a robotic arm which works as the thing's humans cannot do time to time. Robotics is the study of electrical, computer and mechanical engineering. The robotic arm used here is to pick and place an object from one place to another. The arm of robot is in such a way that it can be moved in forward, backward direction as well it can rotate upto 180 degree. Also, it moves in left and right direction. One of the joint present at the base will be following rotational motion. The wheels used for this robot can move freely and quickly through any type of the surfaces. The commands used for wheeled robot are not that much complicated and the movement of the robot is very quick. This wheeled robot can be very useful in the industrial as well as for domestic purpose. The wheels used in this robot are controlled by motors for the rotation. Here the robotic arm is controlled through Internet of Things. The commands to the robotic arm can be given through mobile phone. The controlling of the arm can be done with the help of mobile application. The application used here is the Robo arm which is developed through MIT app. The arm will be controlled by the mobile application. For operation purpose we are using Bluetooth module for controlling the robotic arm.

2.Methodology

A. Existing Methodology

Various existing robotic arm works on 4 degree of rotation and is controlled by remote. This type of robotic arm can pick and place the object but it is restricted to some extent. But before in existence, there is only 4 degree of rotation due to which it can't drive from one place to another to pick or place an object that is far from the robotic arm.

B. Proposed Methodology

In the proposed methodology, the main part of the paper is the robotic arm, with the help of which the objects can be easily picked and placed from one place to another. To perform the required actions, the robotic arm can be controlled by giving the commands. The robotic arm are equipped with the servo motors. These motors help to move the arm in required direction. These motors are controlled with the help of ARDUINO. The controlling of arm is done by using mobile app connected with bluetooth module. It receives signal from mobile and transfers it to the microcontroller. In this way, the robotic arm perform its operation according to the user's commands given through smartphone.

AUGMENTED REALITY FOR REAL ESTATE ADVERTISEMENT.

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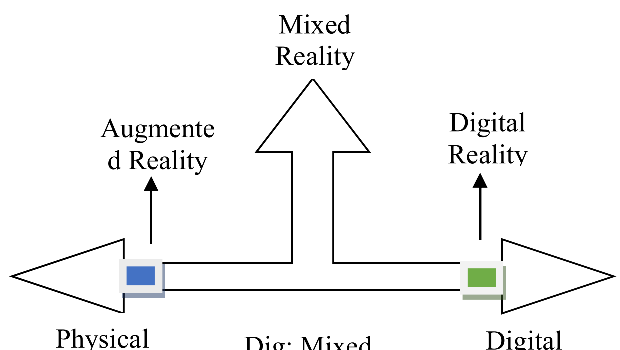
Abstract - Augmented Reality (AR) is an upcoming technology which can help individual to carry out the convoluted task. Augmented Reality merges actual world with the virtual world.
Mixed Reality (MR) is the outcome of merging the physical phase with the digital phase. Mixed reality is the back-to-back up gradation in life of humans, field of computer, and environment interaction.AR expects advancements in e-vision, graphical processing potential, display technology, and input systems. Mixed reality is branched into virtual reality and augmented reality. Virtual reality (VR) is an unreal platform that is generated with unity software and presented to the client in such a way that the client accepts it as a real environment. Augmented reality (AR) is a 3-D view of a physical, real-world environment mixture in user mobile or hololens.

Numerous solutions based on Augmented Reality have been discovered by the researcher community specifically in maintenance process. Augmented Reality tools have given new look and have promised drastic improvements. On the other side Augmented Reality is a highly demanding technology but it is still affected by serious exceptions that may seriously affects its implementations in the industrial sector.

Key Words: real-estate, MIXED REALITY, virtual reality, augmented reality.

1. INTRODUCTION

In the flow of rapid development of technology, the designer's visualization tools used for product design process have been changed within the months or years, Augmented Reality especially since 1990s have been using inevitable tools frequently used in all visualization-based product from concept development to presentation and marketing by majority of designers. With the help of 3D virtual models created with these systems, designing process in terms of both time and quality have been progressed. However, such a systems join the designers to a computer-centered desk working and because of viewing 3D model from 2D screen, relationships between model and space become vague. In addition to this the designer's interaction with Virtual Reality and Augmented Reality make it easy having the multi-dimensional development environment. However, the combination of both technologies providing the rapid solution of these problem.



Dig: Mixed Reality Spectrum

2. LITERATURE SURVEY

Proposed Technique	Author	Year	Published in
Mobile Tele-instruction Using Interactive Augmented Reality	Jun Park	2003	Springer-Verlag Berlin Heidelberg-erg
Mixed reality in education, entertainment, and training	C.E. Hughes ,C.B. Stapleton ,D.E. Hughes , E.M. Smith	2005	Institute of Electrical& Electronic Engineers
Presentation-Oriented Visualizatio-n Techniques	Robert Kosara	2016	Institute of Electrical& Electronic Engineers

FEATURE EXTRACTION OF SATELLITE IMAGES USING MACHINE LEARNING

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Abstract:- In our project, machine learning will be This is the image where the prediction is done processing their images and producing respective valid data for the same. The high resolution satellite images are being provided by RRSC- C ISRO, Nagpur. In order for autonomous systems to interact with their environment in an intelligent way, they must be given the ability to adapt and learn incrementally and deliberately. This project focuses on extracting and identification of objects from the high resolution satellite images which will be provided as an input from the satellite to extract the features of the image which is then converted into machine valid data. This valid data is then fed to neural network model. The neural network model analyzes each image and classifies it with the feature label. This will generate the output screen which displays the extracted feature from the original image which is given as input to the system.

1.INTRODUCTION

Machine learning is the scientific study of algorithms and statistical models that computer systems use to perform a task without using explicit instructions, relying on patterns and inference. In our program, machine learning algorithms are applied to achieve image processing.

Machine learning is the scientific study of algorithms and statistical models that computer systems use to perform a task without using explicit instructions, relying on patterns and inference. In our program, machine learning algorithms are applied to achieve image processing.

In ISRO, to perform image processing the scientists have to first convert the image into data frames and feed this information into a system application where manually they have to change the bands depending on the image and identify objects in the image. This process is time consuming and sometimes can lead to errors as the data is not precise which can lead to inaccurate processing of the data. Our projects builds a system that can identify the number of bands of the image and create precise data that can be fed to the system.

This data is then processed using the concept of convolutional neural network to obtain feature extraction and object recognition without any manual effort.

The primary concept of the project is to focus on the information which will be obtained by processing of the images or datasets that are made available from the sensor. The sensor that is used for the purpose of our project is LINEAR IMAGE SELF SCANNING SENSOR – IV, also known as LISS-IV. The images on the satellite are captured by the sensor which takes high resolution images. The high resolution satellite images are being provided by RRSC- C ISRO, Nagpur.

2.LITERATURE SURVEY

Remote Sensing is a technique introduced in early 1960's for data analysis and interpretation. Remote sensing collects huge amount of satellite data. Satellite remote sensing imagery covers large geographical area with high temporal frequency as compared to other imagery. Interpretation of these satellite images helps in a variety of applications as environmental conservation and management, water resource research, soil quality studies, environmental study after natural disasters, meteorology simulations, deriving land use and land cover information, preventing natural disasters, studying climatic change evolution.

Different techniques are used for data extraction from remote sensing images.

Classification technique is the most useful technique for image interpretation and information extraction [2]. Satellite image classification groups together the pixels of the image into number of different defined classes. The classification helps in extracting the information contained in different bands [3] of the satellite sensor and the information is extracted in terms of digital numbers which is then converted to a category.

S. Muhammad et al., [4] proposed a supervised satellite image classification method using decision tree technique. This method extracts features from satellite image based on pixel color and intensity. Extracted features assist to determine objects reside in the satellite images.

The methods classifies satellite images using decision tree with the support of identified objects. In paper,

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 02 | Feb -2020 ISSN: 2582-3930

Data Mining Using Dynamic Query Form Techniques

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Abstract - A Dynamic query form system which generates query form according to the user's desire at the run time. The system provides a solution for the query interface in large and complex databases. Different kinds of databases such as modern scientific database, web dataset. These are maintain large and heterogeneous data with large number of relations and attribute. So it is very difficult to design a set of static question forms to answer various ad-hoc database queries on these modern database. Thus there is a need of such system which generate Query forms dynamically according to the user's need at run time. The proposed system Dynamic Query Form i.e. DQF system going to provide a solution by the query interface in large and complex databases. The goodness of a query form is determined by the query results generated from the query form.

Key Words: Query Forms, User interaction, Query Form Generation, DQF, Databases, query forms

1.INTRODUCTION

Data mining is a process of extracting hidden predictive information from large database or extracting knowledge from large amount of data is called as data mining. Data mining sources database for hidden patterns, finding predictive information that experts may miss, as it goes beyond their expectations. Knowledge discovery in database (KDD) is the process of discovering useful knowledge from the collection of data. The process of KDD are Data cleaning, Data integration, Data Selection, Data Transformation, Data mining, Pattern evaluation and Knowledge representation. Query is one of the most widely used user interfaces for querying databases. Traditional query forms are designed or predefined by developers. There are different types of query like Select, Insert, Update, Delete etc. Select is one of the most important form of query. In natural Sciences such as genomics and diseases, the database have over hundreds of entities for chemical and biological data resources. Many web databases, such as freebase and DB Pedia, typically have thousands of structured web entities. Therefore it is difficult to design a set of static query forms to satisfy various ad-hoc database queries on those complex database. Ranking and Indexing Technique is supported in this process of Dynamic query form for Database query. Ranking is a list of all items in a prominent place and Indexing is a way to optimize the performance of a database by minimizing the number of disk accesses required when query is processed. It is a data structure technique which is used to quickly locate and access the data in a database.

2. LITERATURE SURVEY

Eric Chu, Aakansha baid, Xiaoyong Chai, AnHain Doan, Jeffery Naughton [1] Specifically, we propose to take as input a target database and then generate and index a set of query forms offline. At query time, a user with a question to be answered issues standard keyword search queries; but instead of returning tuples, the system returns forms relevant to the question. The user may then build a structured query with one of these forms and submit it back to the system for evaluation.

Magesh Jayapandian , H.V.Jagadish [2] In this paper, we seek to maximize the ability of a forms-based interface to support queries a user may ask, while bounding both the number of forms and the complexity of any one form. While a careful analysis of real or expected query workloads are useful in designing the interface, these query sets are often unavailable or hard to obtain prior to the database even being deployed. Hence generating a good set of forms just using the database itself is a challenging yet important problem.

Shyam Boriah, Varun Chandola, Vipin Kumar [3] In this paper we study the performance of a variety of similarity measures in the context of a specific data mining task outlier detection. Results on a variety of data sets show that while no one measure dominates others for all types
of problems,some measures are able to have consistently high performance.

Line Follower Carrier Bot

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Abstract - Now a days lots of machines are proposed for reducing the human work. Humans need lot of time and work hence we are introducing Automatic Carrier Bot which will reduce the Human's efforts. As the proposed Automatic Carrier Bot is based on Internet of Things(IoT), we are making an wireless application to give the instruction to the carrier Bot for executing the task. The machine or robot that carries message automatically to the destination by following a particular path given by the sender. The message and destination are given from an application developed for the proposed bot. The proposed bot working on line following algorithm.Line following design to make the movement automatic, by following.This projects aims to implement the algorithm and carry message to the destination by avoiding the obstacles, to detect the obstacles an ultrasonic sensor is fixed. In addition an LED screen is added in order to display the notice and to take entries. It can be used institutional automated notice carrier,industrial notice carrier, small transport applications and other similar applications, etc.

Key Words:Arduino Uno, IoT, line follower, Obstacle Avoidance

1.INTRODUCTION

According to various reports and studies, the number and variety of robot applications in industry and our day to day life increasing. But many robots are specialized, being barrier to a limited number of operations. The Internet Of Things infrastructure allows connections between different entities (i.e. Human beings, wireless sensors, mobile robots, etc), using different but interop able communication protocols and makes a dynamic multimodal/ heterogenous network. The Internet of Things (**IOT**) provides an internet connectivity to the physical devices. Line follower is a machine that can detect the path. The path can be a black line over white surface. Sensing line with the help of IR sensor and keep robot on line by avoiding the obstacles. IOT is widely used in the areas of innovation. The aim of this project is to carry notice given by the admin, which is directly displace on the LED screen fit on the bot to the destination which is given by admin. This is basically designed for institutional application such as school, colleges, and universities for carrying notice on particular place in a campus. The bot consists of DC gear motors, motor driver, Infrared sensor, ultrasonic sensor, Arduino Uno, LED screen,12V battery, wheels. Motor driver is used to control the movement of DC motors when they want to turn left or right.

i. HARDWARE REQUIREMENTS

Arduino UNO is the main device we use in this proposed bot to connect all the other devices. Arduino UNO is an electronic micro controller board which is easy for software and hardware use. It takes input in the form of light of sensorsand turns outputs it into activating the motors.

H BRIDGE (Motor Driver) controls DC motor to take appropriate action. These circuits are often used in robotics and other applications to allow DC Motor to run forward and backward.

The Infrared Sensor consist of IR LED and IR Photodiode.IR LED emits light which strikes on the surface and gets reflected back to the photodiode. By this process IR Sensor detects a particular path or a black line. **Ultrasonic Sensor** sends sound waves and measures the distance to an object when it bounced back. For obstacle avoiding these

Blind Watermarking Technique using Redundant Wavelet Transform for Copyright Protection

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Abstract:- *Advanced watermarking system is an optionally available approach to ensure the certified innovation of computerized snap shots. This Project indicates a move breed dazzle watermarking technique deliberate by using becoming a member of RDWT with SVD considering an alternate off among impalpability and strength. Watermark placing areas are resolved making use of a modified entropy of the host picture. Watermark putting in is utilized by searching on the symmetrical grid is received from the cross breed plot RDWT-SVD. In the proposed plan, the watermark photograph in parallel configuration is blended by using Arnold turbulent guide to offer additional safety. Our plan is attempted underneath various forms of signal dealing with and geometrical assaults. The take a look at effects exhibit that the proposed plan gives better power and less contortion than different present plans in withstanding JPEG2000 strain, editing, scaling and exceptional Noises.*

Keywords—JPEG2000, RWDT-SVD

Big information has gain large reputation and attracting attentions The expected idea fuses a model, to be particular, the Features Classification Forest, that substantially enhances the capability of visually impaired watermarking frameworks without the symptoms of corrupting the bodily property and nice, and it'll be redone to the ones watermarking strategies upheld numerical property trade or then again a department device. These guides here mean that a twofold association might be set up by controlling a meeting of the houses of a photograph in a methodical way to get a perceived situation inside which each property speaks to exclusively whichever an absolute or opposing technique, that the parallel grouping the absolute method stays for bit , and moreover the opposing technique remains for bit 0 can be implanted into the duvet photo.

Features Classification Forest The main subject matter utilizes the CRT hypothesis in light of the truth that the adjustment controls and placed on the one of a kind trigonometric cosine trade on an 8 × 8 envisioned rectangular. A DC and three AC quantities are picked on account that the inserting area to put in the watermark bit drift.

The subject matter is protected through the safety of JPEG stress; on the identical time, it's to some diploma weaker than the 5th idea, which may be appeared inside the research place. The 2d concept applies (SVD) on a 4 × 4 measured rectangular . By moving investigation of the connections of elements within the U orthogonal lattice, the topic determined that the components set at the subsequent line introductory segment and in this way the 1/3 line starting segment are next to each option. Consequently, the watermark bit float is inserted into the connection of those twin sections with the aid of enhancing any individual in the entirety approximately components,For this we are able to be going to use wavelet rework in our undertakingthat the components set at the subsequent line introductory segment and in this manner the third line starting section are next to each option. Consequently, the watermark bit flow is inserted into the connection of those dual sections by modifying any one in everything about components,For this we will be going to use wavelet transform in our project

- The confidentiality and data integrity are required to protect against unauthorized access.
- This has resulted in an explosive growth of the field of information hiding.
- Moreover, the information hiding technique could be used extensively on applications of, military, commercials, anti-criminal, and so on.
- To protect secret message from being stolen during transmission, there are two ways to solve this problem in general.
- One way is encryption, which refers to the process of encoding secret information in such a way that only the right person with a right key can decode and recover the original information successfully.
- Another way is steganography, steganography literally means covered writing.
- Its goal to hide the fact that communication is taking place.

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Illumination and colour classification method to detect digital image forgeries

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***Abstract*— With the growing challenges in authenticity and integrity of photographs, image manipulation has crumbled assurance over virtual picture. The principal motivation of the forgery in picture is manipulating the photo in this type of way that it can not be prominent to the bare eye. Image manipulation has multiplied the demand to evaluate the trustworthiness of digital photos while utilized in crime investigation, as witness of regulation and for surveillance functions. In this paper, diverse sorts of image forgery and detection techniques have been defined. Initially special kinds of forgery assaults are categorized and precis of passive approach is discusse In latest days, photos were used as evidence in courts. Photographers are capable of create composites of analog pictures, this manner could be very time consuming and calls for professional know-how. nowadays, effective digital photograph editing software program makes photo changes honest. This undermines our believe in pictures. In this project, one of the most common sorts of photographic manipulation, known as photo composition or splicing is analysed .A forgery detection method that exploits subtle inconsistencies within the shade of the illumination of pix. The proposed approach is gadget-gaining knowledge of based totally and requires minimal consumer interaction. The method is relevant to photographs containing or greater people and requires no expert interaction for the tampering choice. right here, the existing paintings may be prolonged by using the use of advanced face detection method the use of skin tone records and edges . A lighting insensitive face detection method based upon the edge and skin tone information of the input coloration image is proposed. From these illuminant estimates, we extract texture- and facet-based features which are then supplied to a system-studying technique for computerized choice-making.**

Keywords: Analog, photographs illuminant

1. INTRODUCTION

Forgery is an unlawful means of manipulating photographs or files without earlier get entry to. Images are tampered for exclusive motives either to create false evidence or to earn cash in an unlawful way. An pictorial illustration of photograph conveys a whole lot better idea than the words of human. Due to the development in digital era, photographs are proceesed the usage of numerous gear like Adobe Photoshop, GIMP and Corel Paint Shop and they ended up with a hazard for the authenticity of digital photos. Generally, photograph manipulations are of two sorts a) Allowed manipulation b) Malignant manipulation. Digital picture processing is the use of laptop algorithms to perform picture processing on virtual photographs. As a subcategory or discipline of digital sign processing, virtual image processing has many benefits over analog picture processing. It lets in a miles wider sort of algorithms to be completed to the enter records and might avoid problems inclusive of the build-up of noise and sign distortion at some point of processing. Since snap shots are defined over dimensions (possibly more) virtual picture processing may be modelled within the shape of multidimensional structures. The set of picture forensic equipment can be kind of grouped into five classes:

1) Pixel based totally techniques that come across statistical anomalies brought at the pixel stage;

2) layout-based completely strategies that leverage the statistical correlations brought thru a selected lossy compression scheme;

3) Camera-based techniques that take advantage of artefacts delivered thru the digicam lens, sensor, or on-chip submit processing;

4) Physically based totally strategies that explicitly version and hit upon anomalies in the three-dimensional interplay among physical gadgets, light, and the virtual digital camera; and

five) Geometric based techniques that make measurements of devices in the global and their positions relative to the camera. Therefore, without a doubt earlier than deliberating taking important actions upon a questionable image, one want to be able to hit upon that an photograph has been altered. Image composition (or splicing) is one of the most not unusual picture manipulation operations.

While checking the authenticity of an photograph, forensic investigators use all available sources of tampering proof. Among special telltale symptoms, illumination inconsistencies are potentially powerful for splicing detection: from the point of view of a manipulator, right adjustment of the illumination conditions is hard to obtain whilst developing a composite image. In this spirit, Riess and Angelopoulou

A Systematic Observation in Digital image Forgery Detection using MATLAB

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Abstract— In latest days, photos were used as evidence in courts. Photographers are capable of create composites of analog pictures, this manner could be very time consuming and calls for professional know-how. Now a days, effective digital photograph editing software program makes photo changes honest. This undermines our believe in pictures. In this project, one of the most common sorts of photographic manipulation, known as photo composition or splicing is analysed .A forgery detection method that exploits subtle inconsistencies within the shade of the illumination of pix. The proposed approach is gadget-gaining knowledge of based totally and requires minimal consumer interaction. The method is relevant to photographs containing or greater people and requires no expert interaction for the tampering choice. Right here, the existing paintings may be prolonged by using the use of advanced face detection method the use of skin tone records and edges. A lighting insensitive face detection method based upon the edge and skin tone information of the input coloration image is proposed. From these illuminant estimates, we extract texture- and facet-based features which are then supplied to a system-studying technique for computerized choice-making.

Keywords: Analog, photographs illuminant

1. INTRODUCTION

Digital photo processing is using pc algorithms to perform photo processing on virtual snap shots. As a subcategory or field of virtual signal processing, digital image processing has many blessings over analog image processing. It allows a miles wider variety of algorithms to be carried out to the enter information and may keep away from troubles such as the build-up of noise and signal distortion for the duration of processing. Since pictures are described over dimensions (perhaps more) virtual photo processing can be modelled in the form of multidimensional systems. The set of photo forensic gear may be kind of grouped into five classes:

1) Pixel primarily based strategies that stumble on statistical anomalies introduced at the pixel level;

2) layout-based totally techniques that leverage the statistical correlations delivered via a selected lossy compression scheme;

3) Camera-primarily based techniques that take advantage of artefacts introduced through the digicam lens, sensor, or on-chip post processing;

4) Physically based strategies that explicitly model and hit upon anomalies inside the three-dimensional interaction among physical items, light, and the digital camera; and

5) Geometric primarily based strategies that make measurements of gadgets in the global and their positions relative to the digicam. Therefore, simply before contemplating taking essential movements upon a questionable image, one need to be capable of hit upon that an photograph has been altered. Image composition (or splicing) is one of the maximum commonplace picture manipulation operations.

While checking the authenticity of an image, forensic investigators use all to be had sources of tampering evidence. Among different telltale symptoms, illumination inconsistencies are potentially powerful for splicing detection: from the viewpoint of a manipulator, right adjustment of the illumination conditions is hard to reap while developing a composite photo. In this spirit, Riess and Angelopoulou proposed to investigate illuminant coloration estimates from neighborhood image regions. Unfortunately, the interpretation of their resulting so-referred to as illuminant maps is left to human specialists. But in actual it seems, this choice is, in practice, often extra difficult than it seems. Reason, relying on human visible assessment may be deceptive, as the human visible system is pretty inept at judging illumination environments in images. Because the human visual device has its challenge Thus, it is foremost to switch the tampering selection to an objective algorithm. Hence in this work, we make an vital step in reducing the person interplay for an illuminant-based totally tampering decision- making. So proposed a brand new semiautomatic technique that is additionally appreciably more reliable than earlier approaches. Quantitative assessment look at indicates that this unique proposed technique achieves a detection rate of 86%, where as existing illumination-based work is slightly better than guessing. We exploit the truth that neighborhood illuminant estimates are maximum discriminative while comparing objects of the same (or similar) cloth. Thus, we focus on the automated assessment of human pores and skin, and more mainly faces, to classify the illumination on a couple of faces as either regular or inconsistent. In the proposed approach

Food Dispensary Customization as per User Requirement

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Abstract

The Chicken poultry industry is an important industry for sustainable food supply in our country. The development of an automatic chicken feeding machine can be very useful to the growth of the poultry industry. In existing system, the chickens need a presence of manpower to manually give the food to the chickens. The use of proposed system can replace the worker for feeding the chicken thus overcome the labour problems in the industry and introduce a semi-automatic process in the poultry industry. The system will be capable of moving from one point to another within a deep litter poultry house, as well as dispense both solid and liquid feed to poultry birds at specific time intervals. The successful development of the anticipated intelligent poultry feeding system is expected to reduce human intervention, increase yield and profit as well as provides high return on investment in poultry farming.

Keywords*: Microcontroller, IoT,ATmega328,Arduino*

1.Introduction

Chicken should be properly raised in order to achieve such qualities so that they are ready be slaughtered. Feeding management is one of the factors that should be undertaken in order to raise healthy chicken. They should be given with the proper commercial feeds and a clean, adequate water supply. But nowadays, the development of technology was used to the conventional method of feeding chicken, which is by filling containers with grains, feeds, and water manually. The main problem by doing this method is the need to continuously provide the food, to be alert and to be conscious on the food remaining in cages. The sufficient amount of the food provided also cannot be determined clearly. Growers also find it difficult to manage their businesses effectively because they need to be around the cages every now and then to monitor the poultry.

2.Methodology

A. Proposed Methodology

The study and implementation of this device would be significant and useful in many aspects. Firstly, the device is equipped with technology that was capable of providing a uniform time in feeding the chicken (or in other words, providing the chicken with the regulated amount of food and water based on the parameters being set). With this, regulated amount of food and water being fed by the system to the chicken saved and/ or reduced wasted feeds due to leftovers and/ or driven out by the mechanism. Also, because the device can dispense feeds at any set time without even monitoring at feeding time, the chicken raiser's time of monitoring the chicken would be lessened.

3. Components Used

A. Arduino

Arduino Mega 2560 is a Microcontroller board based on Atmega2560. It comes with more memory space and I/O pins as compared to other boards available in the market. There are 54 digital I/O pins and 16 analog pins

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Robust and Fast Detection of Moving Vechiles in Aerial Videos Using Sliding Windows in MATLAB

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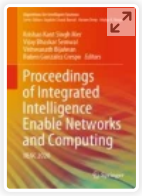
***Abstract*— Intelligent Transportation Systems (ITS) permit us to have high exceptional site visitors facts to lessen the danger of probably vital situations. Conventional image-primarily based site visitors detection strategies have difficulties obtaining precise photographs due to attitude and historical past noise, negative lights and weather conditions. In this paper, we suggest a brand new method to correctly phase and track cars. After disposing of perspective the use of Modified Inverse Perspective Mapping (MIPM), Hough remodel is carried out to extract avenue lines and lanes. Then, Gaussian Mixture Models (GMM) are used to segment transferring items and to tackle vehicle shadow results, we observe a chromacity-based totally strategy. Finally, performance is evaluated via three one of a kind video benchmarks: personal recorded videos in Madrid and Tehran (with distinct weather situations at urban and interurban regions); and two famous public datasets (KITTI and DETRAC). Our effects imply that the proposed algorithms are strong, and greater accurate in comparison to others, mainly when going through occlusions, lighting fixtures versions and climate situations.**

Keywords: Historial, Camera Motion.

I INTRODUCTION

Cameras established on airplanes or Unmanned Aerial vehicles (UAVs) are able to have a look at the floor location and collect video statistics in a fairly powerful and green way. The numerous large quantity of functionality applications are automated visitors monitoring, detection of strange behaviour, border protection, or surveillance of restricted areas. The ones packages percentage the want for correct detection and monitoring of all shifting objects in the camera's location of view before the scene may be analysed and interpreted. There are numerous elements that complicate the automation of transferring item detection along with the big distance among camera and devices main to small-sized gadgets inside the image, simultaneous object and camera motion, shadows, or low assessment due to prone illumination. Although many approaches for shifting item detection in aerial video surveillance information exist within the literature, those strategies are often lacking reliability, robustness, or real-time functionality. In this assignment, we focus on the application of sliding windows for vehicle detection in aerial movement snap shots. At the start evolved for face and human detection that could be a brute pressure or exhaustive are trying to find approach used to localize items of a nice elegance throughout the complete photo. A classifier learns an item appearance model to opinions its self warranty approximately object life at every are searching for step. The applicability of sliding home home windows for car detection in aerial motion photos. But, the purpose to pick out



Proceedings of Integrated Intelligence Enable Networks and Computing pp 383–389

Role of Machine Learning and Deep Learning Approaches in Designing Network Intrusion Detection System

Kapil Hande & Urmila Shrawankar

Conference paper | First Online: 24 April 2021

Part of the Algorithms for Intelligent Systems book series (AIS)

Abstract

There has been increasing number of attacks in computer communication networks including IoT and cloud infrastructure in recent years. Finding out malicious attacks from unknown sources is biggest challenge in network intrusion detection system. Identifying normal network traffic from malicious traffic is also a complex task in IDS. Good IDS requires highest detection rate and lowest false alarm. IDS acts as a second level of defence in addition to network firewall. Network IDS consists of three modules: data collection, feature selection and decision engine. IDS can be classified into two types namely misuse detection and anomaly detection commonly used in practise. To improve the IDS, detection efficiency researches are focusing on many deep learning techniques. Deep learning is an advanced subset of machine learning. These techniques are closer to artificial intelligence domain. Deep learning can be applied to many challenging learning problems and has generated good results. This paper investigates the appropriateness and analysis of application of deep learning and machine learning methods in implementation of network intrusion detection system.

Keywords

IDS **Network security** **Machine learning** **Deep learning**

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Design Of Low Complexity Channel Estimation and Reduced BER in 5G Massive MIMO OFDM System

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***Abstract*— 5G networks appoint multicarrier modulations (MCM)s along with filtered-orthogonal frequency division multiplexing (F-OFDM) and standard filtered orthogonal frequency division multiplexing (UF-OFDM) as a solution to triumph over the demanding situations of excessive statistics fees and spectral efficiency [1]. However, MCMs have high peak to average power ratio (PAPR) which drives the energy amplifier (PA) within the linear location ensuing within the decreased performance. To conquer this hassle PAPR need to be reduced [1-4]. In this paper, precoding based PAPR reduction strategies which includes Discrete Fourier Transform (DFT), Discrete Cosine Transform DCT) and Zadoff-Chu Transform (ZCT) are carried out the use of MATLAB for F-OFDM and UF-OFDM systems. Comparison analysis suggests that Zadoff-chu Transform precoding method for PAPR reduction offers higher effects. Hence, ZCT precoding is proposed for both FOFDM and UF-OFDM systems. Simulation effects display that proposed technique lowers down the strength spectral density (PSD) tails on the PA output, reduces PAPR and immediately to average electricity ratio (IAPR) and conserves the bit mistakes rate (BER) within the AWGN channel**

Keywords 5G, UF-OFDM, F-OFDM, peak to average power ratio (PAPR), IAPR, precoding, Zadoff-Chu Transform (ZCT), Power Spectral Density (PSD), BER

1. INTRODUCTION

Digital photograph processing is the use of laptop algorithms to Disorder correspondences are a use of Chaos idea which offers protection in transmission of information. Confusion correspondence framework is increasingly at ease now-a-days. In turmoil correspondence framework security is excessive due to its features, as an instance, non-intermittent, extensive-band, non consistency and easy execution. The essential little bit of leeway of Chaos correspondence framework is that it relies upon starting conditions. It is extremely sensitive to beginning conditions, in the occasion that underlying conditions are modified; at that factor disorder sign is changed to numerous sign.

Except if the clients will recognise the underlying circumstance, the Chaos signal isn't accurate and it's going to develop into difficult to count on its really worth. That is the cause confusion correspondence framework is non-unsurprising and due to this cause the security stage of disorder correspondence framework increments. In spite of the truth that confusion correspondence is comfortable correspondence and has severa favourable circumstances, the framework likewise has a burden on Bit Error Rate (BER) execution. The BER execution of disorder correspondence framework is greater regrettable. There are many research work accomplished to improve the BER execution

The BER execution of disarray correspondence framework is advanced by using making use of MIMO (Multi Input Multi Output) framework, in light of the reality that in turmoil correspondence framework the message sign is unfold and has many transmitted photographs. MIMO method is applied to transmit facts sign making use of one of a kind reception apparatuses by using numerous methods. MIMO encoding approach is utilized in mild of the reality that the restrict of facts is similar to the quantity of radio twine, if severa reception apparatuses are related to Chaos correspondence framework.

At the beneficiary facet the sign from various is brought to get the first wanted yield. In this paper, we advocate confusion correspondence framework using 2X2 MIMO method which makes use of courting defer circulate keying (CDSK) and BER execution is classed over Rayleigh MIMO blurring channel. We are using Alamouti STBC encoding of MIMO if you want to improve the BER execution of the framework. Likewise, the Zero Forcing reputation calculation is utilized.

The excessive energy and spectrum performance of massive more than one-enter multiple-output (MIMO) structures heavily construct on the idea that the bottom stations (BS) attain channel country information (CSI) with affordable excellent, that's commonly predicted via pilot sequences However, inside the uplink large MIMO systems, the pilot overhead demanded have to be proportional to the range of users and would be prohibitively massive because the wide variety of customers growth. In the uplink multicell massive MIMO, this outcomes in pilot infection because the equal pilot sequences should be reused by way of neighbor cells to serve a large variety of users Moreover, the pilot infection is a first-rate limiting factor to

INTERNATIONAL RESEARCH JOURNAL OF ENGINEERING AND TECHNOLOGY (IRJET) E-ISSN: 2395-0056
VOLUME: 07 ISSUE: 01 | JAN 2020 WWW.IRJET.NET P-ISSN: 2395-0072

Design of Low Complexity Channel Estimation and Reduced BER in 5G Massive MIMO OFDM System

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Abstract— In this Project we are going to utilize chaos correspondence to improve bit Error rate (BER) execution of the framework. The current research says that the BER execution of the framework is terrible and it is the significant inconvenience of the correspondence framework. We propose disarray correspondence framework utilizing 2X2 MIMO procedure which uses relationship defer move keying (CDSK) and BER execution is assessed over Rayleigh MIMO blurring channel. We are utilizing MIMO encoding procedure in light of the fact that the limit of information is relative to the number r of radio wire, if numerous reception apparatuses are connected to turmoil correspondence framework. So it is great way a1813pplying numerous - input and various yield (MIMO) to the Chaos correspondence framework and after that assess BER execution by applying disorder map. The interest for high information rate without obstruction is expanding definitely. So we are utilizing the idea of Orthogonal Frequency Division Multiplexing (OFDM) which gives high information rates just as substantially more data transfer capacity effectiveness when contrasted with other regulation proceduresTo deal with the unknown channel sparsity of the massive MIMO channel, this paper proposes a structured sparse adaptive coding sampling matching pursuit (SSA-CoSaMP) algorithm that utilizes the space–time common sparsity specific to massive MIMO channels and improves the algorithm from the perspective of dynamic sparsity adaptive and structural sparsity aspects. It has a unique feature of threshold-based iteration control, which in turn depends on the SNR level.

Keywords: MIMO,BER,OFDM,CDSK

1. INTRODUCTION

Digital image processing is the use of computer algorithms to Disorder correspondences are a use of Chaos theory which gives security in transmission of data. Confusion correspondence framework is increasingly secure now-a-days. In turmoil correspondence framework security is high because of its qualities, for example, non-intermittent, wide-band, non consistency and simple execution. The fundamental bit of leeway of Chaos correspondence framework is that it relies upon starting conditions. It is extremely delicate to starting conditions, in the event that underlying conditions are changed; at that point disorder sign is changed to various sign.

Except if the clients will know the underlying condition, the Chaos sign isn't correct and it will turn into difficult to anticipate its worth. That is the reason confusion correspondence framework is non-unsurprising and because of this reason the security level of disorder correspondence framework increments. In spite of the fact that confusion correspondence is secure correspondence and has numerous favourable circumstances, the framework likewise has a burden on Bit Error Rate (BER) execution. The BER execution of disorder correspondence framework is more regrettable. There are many research work done to improve the BER execution

The BER execution of disarray correspondence framework is improved by applying MIMO (Multi Input Multi Output) framework, in light of the fact that in turmoil correspondence framework the message sign is spread and has many transmitted images. MIMO method is utilized to transmit data sign utilizing different reception apparatuses by numerous ways. MIMO encoding method is utilized in light of the fact that the limit of information is corresponding to the quantity of radio wire, if numerous reception apparatuses are connected to Chaos correspondence framework.

At the beneficiary side the sign from various is added to get the first wanted yield. In this paper, we propose confusion correspondence framework utilizing 2X2 MIMO method which uses relationship defer move keying (CDSK) and BER execution is assessed over Rayleigh MIMO blurring channel. We are utilizing Alamouti STBC encoding of MIMO so as to improve the BER execution of the framework. Likewise, the Zero Forcing recognition calculation is utilized.

The high energy and spectrum efficiency of massive multiple-input multiple-output (MIMO) systems heavily build on the premise that the base stations (BS) obtain channel state information (CSI) with reasonable quality, which is generally estimated via pilot sequences However, in the uplink massive MIMO systems, the pilot overhead demanded should be proportional to the number of users and would be prohibitively large as the number of users increase. In the uplink multicell massive MIMO, this results in pilot contamination as the same pilot sequences have to be reused by neighbor cells to serve a large number of users Moreover, the pilot contamination is a major limiting factor to system performance Hence, the massive MIMO urgently needs efficient channel estimation scheme without producing pilot contamination and requiring too much pilot overhead. Based on the estimated CSI, the signals received at base stations are typically detected through linear methods with low complexity, such as zero-forcing and matched filter However, the performances of linear detector are typically far inferior to the optimal maximum likelihood (ML) detector whose computational complexity exponentially scales up with the signal constellation size and the number of antennas . Thus, the development of computationally efficient and reliable detector for massive MIMO also needs to be thoroughly addressed

In the past few years, several types of schemes have been exploited to mitigate or reduce the impact of pilot contamination in multicell massive MIMO systems.

(1) Semi-blind or blind approaches, such as the eigenvalue decomposition-based method with a short training sequence a semi-blind method without requiring the statistical information of channels. Another low-complexity semi-blind approach was proposed in which the received signal are firstly projected onto the subspace with minimal interference, then alternatively refined the channel estimation and detected the data symbols.

A Review on Audible Sound Analysis based on State Clustering through Multiple Deep Neural Network Modeling

Ms. Sneha Thune[1], Dr. N.K. Choudhari[2], Ms. A.P. Thakare[3]

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Abstract:- *Statistical parametric speech synthesis (SPSS) combines an acoustic model and a vectored to render speech given a text. Typically decision tree-clustered context-dependent hidden Markov models (HMMs) are employed as the acoustic model, which represent a relationship between linguistic and acoustic features. Recently, artificial neural network-based acoustic models, such as deep neural networks, mixture density networks, and long short-term memory recurrent neural networks (LSTM-RNNs), showed significant improvements over the HMM-based approach. This project reviews the progress of acoustic modeling in SPSS from the HMM to the LSTM-RNN. Understanding sound is one of the basic tasks that our brain performs. This can be broadly classified into Speech and Non-Speech sounds. We have noise robust speech recognition systems in place but there is still no general purpose acoustic scene classifier which can enable a computer to listen and interpret everyday sounds and take actions based on those like humans do, like moving out of the way when we listen to a horn or hear a dog barking behind us*

Keywords: *SPSS, HMM, LSTM-RNNs*

1. INTRODUCTION

The goal of text-to-speech (TTS) synthesis is to render a naturally sounding speech waveform given a text to be synthesized. Figure 1 outlines a human speech production process. A text (or concept) is first translated into movements of articulators and organs. Using air-flow from a lung, vocal source excitation signals containing periodic (by vocal cord vibration) and aperiodic (by turbulent noise) components are generated.

By filtering the source signals by time varying vocal tract transfer functions controlled by the articulators, their frequency characteristics are modulated. Finally, the filtered source signals are emitted. The aim of TTS is to mimic this process by computers in some way. Text-to-speech can be viewed as a sequence-to-sequence mapping problem; from a sequence of discrete symbols (text) to a real valued time series (waveform).

Typical TTS systems consist of text analysis and speech synthesis parts. The text analysis part includes a number of natural language processing (NLP) steps, such as word segmentation, text normalization, part-of-speech (POS) tagging, and grapheme-to-phoneme (G2P) conversion. This part performs a mapping from a sequence of discrete symbols to another sequence of discrete symbols (e.g., sequence of characters to sequence of words). The speech synthesis part performs mapping from a sequence of discrete symbols to real-valued time series.

It includes prosody prediction and speech waveform generation. The former and latter parts are often called “front-end” and “back-end” in TTS, respectively. Although both of them are important to achieve high-quality TTS systems, this paper focuses on the latter one. Statistical parametric speech synthesis (SPSS) is one of the major approaches in the back-end part. This approach uses an acoustic model to represent the relationship between linguistic and acoustic features and a vocoder to render a speech waveform given acoustic features. This approach offers various advantages over concatenative speech synthesis , which is another major approach in the text (concept) frequency transfer characteristics magnitude start--end fundamental frequency air flow Sound source voiced: pulse unvoiced: noise speech

Outline of speech production process. back-end part of TTS systems, such as small footprint and flexibility to change its voice characteristics However, the naturalness of the synthesized speech from SPSS is not as good as that of the best samples from concatenative speech synthesizers. Zen et al. reported three major factors that can degrade the naturalness quality of vocoder, accuracy of acoustic model, and effect of over smoothing. This paper addresses the accuracy of acoustic model. Although there have been many attempts to develop a more accurate acoustic model for SPSS], the hidden Markov model (HMM) is the most popular one. Statistical parametric speech synthesis with HMMs is known as HMM-based speech synthesis Inspired from the success in machine learning and automatic speech recognition, 5 different types of artificial neural network based acoustic models were proposed in 2013.

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Audible sound analysis based on state clustering through multiple deep Neural Network Modeling

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Abstract ***Speech sign processing is an emerging area to observe the processing of speech signals with digital sign processing generation and phonological understanding. It is one of the core technologies inside the subject of records technological know-how studies. Passing records via voice is the maximum essential, simplest,most typically used and handy trade form of information. The Matlab language is a totally powerful computer software software program for facts evaluation and processing. It can rework sound files into discrete facts documents after which use their powerful matrix computing strength to process records along with digital filtering, Fourier remodel, domain and frequency domain evaluation, sound playback and a variety of pictures. Its sign processing and analysis toolbox for the voice signal evaluation gives a completely rich function, using these features can speedy and without difficulty entire the voice signal processing and analysis, in addition to sign visualization,making human-pc interplay greater convenient. Signal processing is one of the crucial applications of Matlab. This design is geared toward most of the voice processing software content, operation inconvenience and different issues. The use of MATLAB 7.Zero incorporated GUI interface design, a diffusion of characteristic calls to achieve the voice signal frequency, amplitude, fourier remodel and filtering, concise interface, clean to perform. All these have certain practical significance. Finally,this paper places forward his very own perspectives on the further improvement of speech sign processing.***

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I. INTRODUCTION

The goal of text-to-speech (TTS) synthesis is to render a Naturally sounding speech waveform given a textual content to be synthesized. Figure 1 outlines a human speech manufacturing process. A textual content (or idea) is first translated into actions of articulators and organs. Using air-waft from a lung, vocal supply excitation signals containing periodic (via vocal wire vibration) and aperiodic (by turbulent noise) additives are generated.

By filtering the supply signals by way of timevarying vocal tract switch capabilities controlled via the articulators, their frequency traits are modulated. Finally, the filtered source indicators are emitted. The intention of TTS is to imitate this process through computers in a few way. Text-to-speech can be regarded as a chain-to-series mapping trouble; from a series of discrete symbols (text) to a realvalued time collection (waveform).

Typical TTS structures encompass text analysis and speech synthesis parts. The text evaluation component consists of some of herbal language processing (NLP) steps, along with word segmentation, text normalization, element-of-speech (POS) tagging, and grapheme-to-phoneme (G2P) conversion. This element plays a mapping from a chain of discrete symbols to any other collection of discrete symbols (e.G., sequence of characters to collection of words). The speech synthesis component plays mapping from a chain of discrete symbols to actual-valued time collection.

It consists of prosody prediction and speech waveform era. The former and latter parts are often known as “the front-give up” and “again-give up” in TTS, respectively. Although each of them are crucial to achieve fantastic TTS structures, this paper specializes in the latter one. Statistical parametric speech synthesis (SPSS) is one of the most important techniques in the returned-stop element. This approach makes use of an acoustic version to represent the relationship among linguistic and acoustic capabilities and a vocoder to render a speech waveform given acoustic capabilities. This technique offers various benefits over concatenative speech synthesis , which is some other major technique within the text (concept) frequency switch traits importance start--give up fundamental frequency air drift Sound supply voiced: pulse voiceless: noise speech Outline of speech production manner. Back-end part of TTS structures, consisting of small footprint and flexibility to change its voice characteristics However, the naturalness of the synthesized speech from SPSS isn't as accurate as that of the great samples from concatenative speech synthesizers. Zen et al. Pronounced three predominant factors that may degrade the naturalness exceptional of vocoder, accuracy of acoustic version, and effect of over smoothing. This paper addresses the accuracy of acoustic version. Although there had been many attempts to develop a extra accurate acoustic model for SPSS],

International Journal of Agriculture Sciences
ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 12, Issue 5, 2020, pp.-9604-9607.
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Research Article

RELATIONSHIP OF NDVI WITH CROP COEFFICIENTS OF WHEAT OBTAINED BY CONSIDERING DIFFERENT METHODS OF ESTIMATING REFERENCE EVAPOTRANSPIRATION

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Received: March 01, 2020; Revised: March 12, 2020; Accepted: March 13, 2020; Published: March 15, 2020

Abstract: It has been observed by many research workers worldwide that the vegetation indices of crops derived from satellite data may have close correlation with the crop coefficients. It is also seen that Normalized Difference Vegetation Index (NDVI) plays an important role in prediction of crop coefficients and other parameters also. The present study was carried out in wheat growing districts of central Maharashtra. Multidate 8 images of satellite IRS P-6, AWiFS sensor of the rabi season of 2012-13, were used for the study. Necessary ground truth work was carried out. By necessary processing of image data NDVI of wheat fields was obtained. It was found that NDVI has close relation with crop coefficients of wheat obtained by all the three methods of reference eapotranspiration. NDVI-Kc PM linear regression showed highest R_2 value (0.895) indicating superiority over other methods of calculating crop coefficients. The relation is given by linear equation Kc PM = 6.461NDVI - 1.157 The results demonstrate that this approach may prove a very useful method for large scale estimation of crop evapotranspiration using crop coefficient estimated by this approach.

Keywords: *Crop coefficient, vegetation indices, NDVI, wheat, AWiFS, evapotranspiration*

Citation: Pimpale A.R., *et al*., (2020) Relationship of NDVI With Crop Coefficients of Wheat Obtained by Considering Different Methods of Estimating Reference Evapotranspiration. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 12, Issue 5, pp.- 9604-9607.

Academic Editor / Reviewer: Dr M K Tiwari

Introduction

Wheat is important food crop of India as well as world. It has major share in human diet. For achieving higher yields of wheat, it is of utmost importance to apply appropriate amount of irrigation water at appropriate time. So, it is required to have the knowledge of accurate water requirement, at different stages of crop development. Crop water requirement refers to the quantity of water which should be added to overcome the water loss from cropped field in the form of evapotranspiration (ETc). Crop water requirement numerically equal to crop evapotranspiration. The crop evapotranspiration (ETc) at different stages of crop development is estimated as product of crop coefficient (Kc) and reference evapotranspiration (ETo) [1]. The crop coefficients are tabulated in FAO 24 publication [2]. However, for more accuracy it is required to find out crop coefficients by local lysimeter studies. The local crop coefficients (Kc) are computed by lysimeter experiments as

$$Kc = ETc / ETo \quad (1)$$

Depending upon the availability of weather data there are different methods of estimating reference evaotranspiration. If sufficient weather data is available the standard FAO Penman–Monteith formula can be used for calculations of daily ETo. Reference evapotranspiration (ETo) can also be estimated by other methods such as Pan Evaporation method and Hargeaves-Samani method. Lysimeter studies on wheat crop at Mahatma Phule Krishi Vidyapeeth Rahuri, Maharashtra, India (2013) [3] have recommended such Kc values for wheat crop week wise based on the above three methods of estimating reference evapotranspiration.

However, there are variations of crop growth stages at different fields. Thus, accounting for spatial and temporal variations in water use with present crop coefficient procedures is extremely difficult. Remote sensing technology can help to a great extent to obtain spatial and temporal crop coefficients of the same crop based on vegetation indices (VI). Normalised difference vegetation Index (NDVI) is a major vegetation index. Jackson *et al*. (1980) [4] observed the similarity between the seasonal pattern of vegetation indices (VIs) of crop fields obtained from satellite data and that of the crop coefficient. Bausch and Neale (1989) [5] derived Kc for corn in Colorado based on several VIs. Glenn *et al*. (2008) [6] remarked that numerous studies have shown a high correlation between NDVI and biophysical characteristics of plants. Limited research on this aspect has been done so far to expand the development of VI-based crop coefficients for field crops in India. Therefore, a study was undertaken in 5 dominant wheat growing districts of central Maharashtra to test the feasibility of vegetation index NDVI for estimating crop coefficients and finding out the most suitable method.

Materials and Methods

The Study area

The study area comprises of centrally located five districts of Maharashtra *i.e.* Pune, Solapur, Ahmednagar, Beed and Osmanabad. In the study area dominant crops are grown in rabi season are sorghum, wheat and chickpea. The study area lies between 73° 15' 57" to 76° 47' 36" E longitude and 19° 59'40" to 17° 04'50" N latitude. Total area of 65,716 Km^2 is covered under this study. The average annual rainfall varies between 500-700 mm with uncertain and uneven distribution. Dry spells occur oftenly. The climate is hot and dry. General topography is having slope between 1-2 %. Most soils are vertisol.

Remotely Sensed data

Multi-date images of satellite IRS- P6, AWiFS (Advanced Wide Field Sensor) Sensor for five consecutive months of wheat season (October / November / December / January / February) of the year 2012-13 were used for this study.