

Controller Design and Implementation of Solar Panel Companion Inverters

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ABSTRACT:

Solar Panel Companion Inverter (SPCI) is a single stage DC-AC power converter, installed with each solar panel. Each SPCI synthesizes an AC quasi-square wave voltage with variable pulse width. Width of AC output voltage of each SPCI is proportional to available power on the solar panel. Output voltages of SPCIs are aggregated across multiple solar panels connected in series, and a sinusoidal AC voltage is synthesized. In this paper, dynamic analysis and closed loop current controller design of SPCI is presented. Simulation results demonstrating the dynamic response of the closed loop SPCI are included. The closed loop current control scheme is implemented on a hardware prototype to demonstrate the grid tied operation of SPCI, and experimental results are presented. Maximum Power Point Tracking (MPPT) algorithm is implemented for Sorted Stair-Case Modulation (SSCM) in MATLAB Simulink. Experimental results demonstrating MPPT operation are presented

Keywords: SSCM, MPPT, SPCI, AC.


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Wavelet transform based Image Retrieval System using Interactive Genetic algorithm

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ABSTRACT

As results of advances within the net and new digital image device technologies, the amount of digital pictures created by scientific, academic, medical, industrial, and different applications on the market to users enlarged dramatically. A Content primarily based image retrieval has become very hip system currently days. however the CBIR is that the methodology wherever there square measure several methodologies square measure on the market and therefore the task of image retrieval becomes effectively easier. Here we tend to use completely different feature descriptors like, color, texture and form descriptors to represent low level options of image. There square measure the techniques known as HSV Color remodel and separate riffle remodel (DWT) parts square measure accustomed generate the image. Here, the user directed mechanism for CBIR victimization Associate in Nursing interactive genetic formula (IGA) is planned and enforced. the colour attributes just like the mean, variance and image electronic image of a color image square measure used as a options for retrieval.

Keywords:-CBIR, fitness function, IGA, population, crossover, mutation.

1. INTRODUCTION

In past, pictures were seen largely within the type of building plans and maps. the necessity and use of pictures grew with the time, significantly with the arrival of photography round the sixteenth century.

within the twentieth century, introduction of laptop and advances in science and technology gave birth to low value and economical digital storage devices and therefore the World Wide net, that successively became the catalyst for increasing acquisition of digital data within the type of pictures [1].

People usually need expeditiously storing and retrieving image knowledge to perform assigned tasks and to form a call. Therefore, developing correct tools for the image retrieval on the idea of image content from massive image information is difficult. generally there square measure 2 differing kinds of approaches (1) text primarily {based} retrieval (2) content based retrieval, square measure typically adopted in image retrieval. within the text-based system, the photographs square measure manually outlined by text descriptors and so employed by a management system to perform image retrieval. However, there square measure 2 restrictions of exploitation this approach within which the keywords square measure accustomed succeed image retrieval: the big works need to do for manual image annotation and therefore the task of describing image content is extremely subjective. The side of matter descriptions

A Study of Virtual Work During The Pandemic and Its Effect On Job Satisfaction: A Theoretical Framework

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Abstract

The year 2020 brought forth global economic concerns, triggered by trade conflicts, strict immigration policies, and protectionist measures. The emergence of COVID-19 heightened fears of a recession, prompting organizations to shift to virtual work environments. The pandemic accelerated the adoption of remote work, supported by advancements in cloud computing, increased Wi-Fi accessibility, and the prevalence of smartphones. Job satisfaction and performance are crucial factors for organizational success. Job satisfaction, defined by Locke and others, reflects positive feelings toward work, while job performance encompasses behaviors adding value to the organization. Literature, including studies by Robbins, Sharma, and others, explores the multifaceted nature of job satisfaction, linking it to individual needs and perceptions. Organizational culture, identified by Alvesson and others, emerges as a binding force influencing satisfaction. The study sets objectives to examine job satisfaction variations across age and gender among Indian IT employees during COVID-19, also exploring the intricate relationship between job satisfaction and performance, forming hypotheses for empirical testing. This research contributes to understanding the dynamics of workforce satisfaction and its impact on performance in the context of a rapidly evolving global landscape.

Keywords: Global Economic Concerns, Remote Work Shift, Job Satisfaction, COVID-19 Impact, Organizational Performance

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Design and Performance Evaluation of Manual Operated Broadcasting Fertilizer Spreader

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Abstract: A newly developed broadcast spreader commonly used for spreading fertilizers (N, P, K) and seeds also. A gear is coupled to the shaft of the wheels of the trolley, which was meshed to another gear in a vertical shaft. The vertical shaft consists of a spreader disk, which spreads the fertilizer to different directions. The amount of fertilizer to be spreader was metered using the adjustable opening; the granular fertilizer was poured into the spreader disk. The fins or vanes in the spreader disk direct the fertilizer to different directions and required amount of fertilizer was spread in to the field. The overall dimensions i.e., length, width and height of the spreader were 2.5, 1.3 and 1.1m respectively. The developed spreader was tested in field by using two different fertilizers i.e., urea and ammonium phosphate sulphate. The cost of developed manual spreader was Rs. 4,380. This spreader works well in field condition and also more time was saved.

Keywords: NPK, Fertilizer spreader, Gears and fins

India is an agricultural country. It is necessary to increase our agricultural productivity, quality and cost of cultivation. Fertilizers are commonly used for growing all crops, with application rates depending on the soil fertility, usually measured by a soil test and according to the particular crop. Soils need fertility maintenance. Soil was a natural body finally divided in to rocks, minerals and organic matter. Sand, silt and clay organic matter help provide tilth, necessary aeration and favorable water intake rate, but the seldom maintain adequate plant food to sustain continues healthy plant growth. In India, the application of granular fertilizers onto agricultural fields is mainly performed using centrifugal spreaders. Despite the mechanical simplicity of these farm implements, the quality of the spreading depends on many parameters, as a result there is a need to better understand and model the process of centrifugal spreading. Fertilizer is any material of natural or synthetic origin used to enhance the growth of plants. About 90% of fertilizer is applied as solids (e.g., Urea, Di-Ammonium Phosphate and Super Phosphate). Fertilizer spreaders for large scale farming are tractor mounted. Conventional spreading of fertilizers for small scale farming is by hand. It has some problems like uneven spreading of fertilizer, more time consuming, high human effort. For large scale farming tractor mounted fertilizer spreaders are used. The traditional method of spreading was more time consuming and more labor was required for working in the field. So these problems are avoided by using manual operated fertilizer spreader. By using this machine uniformity of spreading was observed in the field and the machine works when the machine moved in forward direction. The wheel rotates smoothly and the power

was transmitted to the gears, so the spreader disk rotates continuously. The fertilizer was stored in the vessel. The amount of fertilizer to be spread and was metered using the adjustable opening and the granular fertilizer was poured into the spreader disk. By using this machine labor was reduced, a lot of time can be saved and also human effort used for carrying heavy bags of fertilizer was reduced and wastage of fertilizer can also be avoided. This machine was very helpful to the small holding farmers for better applying the fertilizers in to the field.

MATERIAL AND METHODS

Study area: The field experiments were conducted at A. M. Reddy Memorial College, Narasaraopet in Guntur (district). The farm is located at 16°10'25" N latitude and 79°59'21" E longitude at an elevation of 77 m above sea level.

Climatic conditions: The climate of Narasaraopet is moderate generally monsoon sets in the last week to June to September (2018). The temperature in summer and winter varies from 25 to 45°C and 5 to 22°C, respectively.

Design considerations of spreader: The broad costing spreader consists of frame, wheel, bevel gear mechanism, handle and hopper these components are made of mild steel.

Frame: A mild steel material was selected for fabrication of frame. The dimensions of the rectangular square frame i.e. length; width and thickness are 500 mm x 350mm x 20 mm respectively. The square frame was as shown in the below (Fig. 1).

Handle: The spreader has a handle of 450 mm length was selected for easy pushing. It is made of mild steel hollow circular bar of 22 mm size (Fig. 2).

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Design and Performance Evaluation of 5-Tyne Cultivator with Attached Leveler

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Abstract: In olden days farmers are used in traditional method of cultivation which was more time consuming and very hard working and also costly. The newly developed multi-purpose tillage tool was fabricated and tested in field condition to evaluate its performance. It contains very less time and easily operated in field. The single pass operation of multipurpose 5-tyne cultivator with attached leveler was tested in field, the field capacity, field efficiency and fuel consumption were 0.28 ha h^{-1} , 77.32 per cent and 7.29 l ha^{-1} respectively. Cost of developed implement was Rs. 8,712 and total cost of operation of developed equipment was Rs. 19 h^{-1} . The 5-tyne cultivator was most satisfactory equipment for seed bed preparation.

Keywords: 5-tyne cultivator, Soil working tool, Leveler, Performance evaluation and efficiency

India is an agricultural country and about 80 per cent people in India are farmers and uses agricultural equipments for tillage operations. Agricultural land plays a key role because undulating topography of the soil surface has a major impact on the germination, water saving and crop yield. Traditional methods of leveling lands are more time consuming operation, more labor required and economical operation will increased. Farm mechanization at every stage of crop production is playing a vital role in agriculture. Due to which, there is increase in yield and labor productivity over traditional agriculture. Skilled drivers are needed to operate tractor or machines efficiently. The requirement placed on farm equipment operators have changed drastically with increase in equipment size, power, multiple equipment functions and speeds. These increasing demands on the operator can result in increased errors in function, costs, environmental problems and operator fatigue (Richey *et al.*, 2009). Farmers either hire the cultivator or seed drill to complete the operation within time. There is a need of such versatile machine which overcome the economic constraints of farmer and can perform both tillage and sowing operation so, that based on the above operations the present study was conducted on design and fabrication of 5-tyne cultivator with attached leveler.

MATERIAL AND METHODS

Design of frame: In this study, mounted type cultivator was designed and constructed in A.M. Reddy Memorial College of Engg & Tech, Narasaraopet. The dimensions of the rectangular section (frame) shaft consist of a length, width,

breadth and thickness were $124.5 \times 51.0 \times 5.0 \times 0.7 \text{ cm}$ and have sufficient strength to bear load more than 1000 kg-f (kilogram-force) and supports were also provided to further increase strength of the frame. In the range of 200 kg-f of load was allocated on the frame at various places. Maximum stress conditions on each point of the frame were observed and were satisfactory during the testing of the material.

Design of double point shovel: It is a component which penetrates into the soil and makes a horizontal cut below the soil surface. It is a sharp, well polished and pointed component and is designed in hexa angular shape and is made of cast iron material and it consists of 0.7 cm thickness. The total length of the double point shovel is 18 cm. The bottom and top well pointed shapes of shovel was triangular and the cutting edge of shovel is 5 cm top and bottom respectively.

Design of tyne: Row crop cultivators have the tines spaced to go between the crop rows and are used for cultivation and weed control operations during the active growth period of crops. It is a metallic circular rod which is made up of cast iron. The tyne consists of 63 cm length and diameter 2.5 cm. The circular rod (tyne) was bended 130° angle with hydraulic bending machine at 33 cm from the top, after bending the rod the top length of tyne is 33 cm and bottom is 30 cm.

Design of three point linkage-(Hitching): The three point hitch system was played a very important role in tractors. Because the entire operations are i.e. primary and secondary tillage operations are done with the help of hitch system. This was fabricated as per the dimensions (width and height) of the implement. Cast iron material was selected for fabrication

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Development and Evaluation of Float Type Manually Operated Drum Seeder

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Abstract: The objectives of the proposed research work experiments were developed and evaluated. The experiments were conducted during *rabi* season of the year 2017-2018. M.S. sheet of 18 gauges was used to fabricate the drum seeder. The design had two drums forming 4 rows. Drums were fixed to an axle, which was connected to two wheels having lugs facilitate rotating even in boggy fields. From the calibration of drum seeder the seed rate of 37.99 and 33.33 kg ha⁻¹ was achieved with the 20 cm row spacing respectively. The field capacity of 20 cm row spacing was observed that 0.07 kg ha⁻¹ with the field efficiency of 77.41 per cent at the seed rate of 38 kg ha⁻¹ whereas the field capacity of seed rate. Maximum tillers of spacing whereas the tillers of 491 m² and panicles of 440 m² were recorded for 20 cm row spacing. Rice sown with 20 cm drum seeder recorded grain yield of 4 per cent higher over 20 cm rows spacing by using manual operated drum seeder. The highest operating cost was Rs. 1820.79 ha⁻¹ with 20 cm row spacing whereas the lowest operating cost was Rs. 1598.26 per ha with 30 cm row spacing.

Keywords: Paddy crop, Grains, Design, Dimensions and performance evaluation

Rice is the staple food of eastern and southern parts of India. The rice plant belongs to the genus *Oryza* of Gramineae family. Mechanization enhances cropping intensity and thereby production and productivity, overall employment of human labour and subsidiary non-farm employment. The introduction of high yielding varieties necessitated the support of mechanical power source, improved agricultural implements and machines and hence, selective mechanization is a necessity for the country. The most suitable strategy to solve the food problems of India is to increase the production per unit area per unit time. But in a developing country like India labour shortage in farming seasonally or all through the year is one of the serious problems, which has adverse effect on agricultural production. Here arises the need for further promotion of farm mechanization, which can reduce farm labour, utilize scarce agricultural inputs effectively and efficiently and complete various farming operations in time (Bhubaneswar 2014). Dry rice cultivation is followed in uplands where there was less possibility for water stagnation. Uplands are characterized by aerobic soil in which attempt was made to impound water. Upland rice was grown on both leveled and sloppy fields those are not banded and are prepared well for dry seeding. The rice crop solely depends upon rainfall for its water requirement. This system of cultivation is followed in many parts of the world, however, mainly confined to tracts that don't have adequate irrigation facilities. The rice crop was grown under wet (season) condition right from sowing to harvest. In this system, the field was repeated ploughed with

5-7 cm standing water (puddling). Rice fields with sandy to sandy loamy soils are ploughed in summer and again ploughed once or twice after letting in water to get the requisite puddle condition. Heavy soils of clay nature are not generally opened in summer. The objectives of the study is to develop a manual operated drum-seeder with a float arrangement.

MATERIAL AND METHODS

In the first phase, the drum seeder was evaluated under laboratory condition. Subsequently the desired output were used and evaluated under field condition in the second phase. The experiments were conducted during *rabi* season of the year 2017-2018.

Experimental site: The field experiments were conducted in A.M. Reddy Memorial College, Narasaraopet in the District of Guntur. The farm is located at 16°10'25"N latitude and 79°59'21"E longitude at an elevation of 77m above mean sea level.

Climate and weather: The climate of Narasaraopet is moderate generally monsoon sets in the last week to October and continues up to March. The temperature in summer and winter varies from 25 to 45° and 5 to 22° respectively. The weather parameters like minimum and maximum temperature, relative humidity, rainfall and sun shine hours during the period of experiments.

Soil characteristics: Analysis of a composite soil sample collected from the experimental field at several randomly selected spots up to a depth of 15cm showed that it is sandy



SURVEYING THE IMPACTS OF RISING GROUNDWATER FROM OCEAN LEVEL ASCENT ON THE ADMINISTRATION LIFE OF ASPHALTS IN BEACH FRONT STREET FOUNDATION

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ABSTRACT :

Seaside people group with street foundation near the shoreline are defenseless against the impacts of ocean level ascent brought about by environmental change. The ocean level in waterfront New Hampshire is anticipated to ascend by 3.9 to 6.6 ft (1.2 to 2.0 m) by 2100. Environmental change powerlessness and adjustment contemplates have concentrated on surface water flooding brought about via ocean level ascent; be that as it may, little consideration has been given with the impacts of environmental change on groundwater. Groundwater is relied upon to ascend with ocean level ascent and will cross the unbound layers of seaside street foundation, along these lines decreasing the administration life of asphalt. Defenselessness considers are a basic piece of adjustment arranging, and asphalt engineers are searching for techniques to recognize streets that may encounter untimely disappointment. Right now study, a territorial groundwater stream model of beach front New Hampshire was utilized to distinguish street framework for which rising groundwater will move into the unbound materials during the structure life of the asphalt. Multilayer versatile hypothesis was utilized to dissect average asphalt profiles in a few utilitarian groupings of roadway to decide the extent of exhaustion and rutting life decrease anticipated from four situations of ocean level ascent. All the assessment locales experienced help life decrease, the extent and timing of which relied upon the current profundity to groundwater, the asphalt structure, and the subgrade. The utilization of this philosophy will empower asphalt architects to target seaside street adjustment extends viably and will bring about noteworthy expense investment funds contrasted and usage of expansive adjustment ventures or the expenses of no activity.

INTRODUCTION

Beach front territories overall are getting increasingly created. Streets, developed to support the assembled condition along the shore, are progressively in danger from

ocean level ascent, increasingly serious beach front tempests, what's more, storm flood (1). Despite the fact that the shoreline in numerous areas could be invigorated later on to shield property from waterfront


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Original Article

A few novel light-cone time-dependent solutions in distorted pp-wave contexts

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Abstract: It is of importance to study brane solutions in time/light-cone time dependent backgrounds because they provide information on the mechanics of cosmological and null singularities. In this study we disclose brane solutions and their bound states against pp wave-like backgrounds that rely on the time-cone of the light source. We demonstrate that the environments in which our solutions exist are cosmologically solitary (light like) in a classical sense. An study of the backgrounds' spacetime supersymmetry shows that they preserve 1/8 of the whole type IIB supersymmetry.

Introduction

Due to its obvious relevance to cosmology, the study of time-dependent backgrounds within the context of string theory is of great importance; more importantly, it holds out hope in the resolution of black-hole and cosmological singularities, like the big-bang singularity, which cannot be resolved otherwise within classical general relativity. In addition, the time-dependent orbifold models [1-4] may be used to

highlight a subset of recent efforts. In addition to retaining certain supersymmetries, these models are also perturbatively solvable. These models are unstable to substantial back response [5-7] because of the blue shifting of modes in these backgrounds. Another time-dependent model that may be solved involves the rolling of the open string tachyon on an unstable brane (brane anti-

DYNAMIC ANALYSIS OF INDUSTRIAL STEEL STRUCTURE BY USING BRACING AND DAMPER UNDER THE WIND LOAD AND EARTHQUAKE LOAD

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ABSTRACT:

Complying with the contemporary-day tendencies of quake inside the path of the area, its miles installed that there may be very extreme risk for quake, due to this growing a need of earthquake immune shape. The excessive structures are at hazard of the seismic heaps and also in addition wind heaps. For this option of enhancing the pressure and additionally furthermore decreasing detail displacement there are numerous strategies to confront the ones side masses like base seclusion, development of hole structures, tuned mass dampers, directly bands and additionally bracings. Among that software application, helping is actually some of the simply applicable techniques to upward thrust as much as the ones form of plenty. Supporting may be used concentrically or eccentrically. The cross bracings are one of the especially previously possessed alternatives of supporting. Bracings are really green in disposing of the bendy seismic waves. This is taken benefit of for enhancing the form with the aid of boosting its tension and additionally in addition variant potential keeping the side displacement as little as realistic. Various kinds of bracings might be used like X, V and moreover Inverted V in addition to numerous others. An strive has truly been made to have a research the discount in feedbacks of a form under lateral loading due to the consolidation of numerous sustaining structures. In this research studies have a have a look at a G +20 constructing shape of approach region 10. Five m X 9m is reviewed under earthquake load in vicinity IV with utilizing establishing infinite supporting frameworks at awesome regions. The evaluation is performed in ETABS via utilizing response range method. The bracing structures idea about are inverted V, V and X bracings.

Keywords: M20, cement, water, coal dust, iron slag, concrete.

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COMPREHENSIVE ANALYSIS OF LOAD CAPACITY IN FINITE JOURNAL BEARINGS

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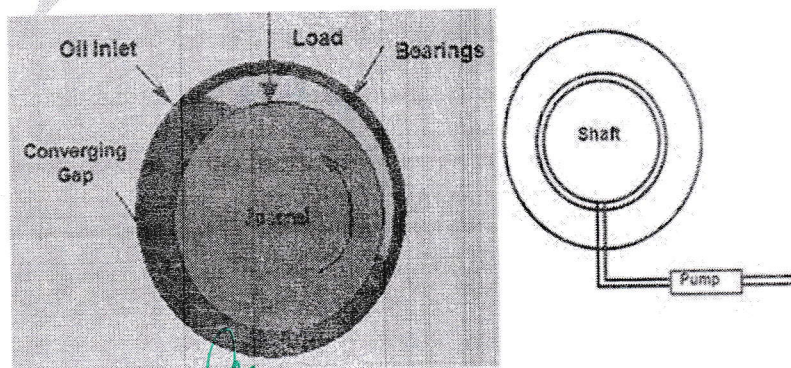
Abstract: This study investigates the influence of additives on lubrication, taking into account viscosity changes and temperature effects, as published in the journal Finite Journal. A generalized Reynolds equation for a two-layer fluid is formulated and applied to finite journal bearings. The Finite Difference Method is employed to numerically solve the modified Reynolds equation for finite journal bearings. It is observed that both pressure and load capacity during the lubrication process increase with the growing impact of temperature on two-layer fluids.

Keywords: Viscosity, eccentricity, film thickness, thermal effect, and finite journal bearing.

INTRODUCTION:

In lubricated systems, typically comprised of moving or stationary surfaces separated by a thin film of lubricant, friction reduction and load support are facilitated. The characteristics of such systems, including pressure in the lubricant film and frictional forces at the surfaces, are determined by factors like surface nature and lubricant film boundary conditions. The Reynolds Equation, initially developed by Reynolds, governs the pressure within the lubricating layer and is derived by linking the equation of motion with the equation of continuity. Initially, factors such as temperature, compressibility, viscosity fluctuation, slip at the surface, inertia, and surface roughness were disregarded. However, subsequent advancements incorporated variations in viscosity and density along the fluid film into the Reynolds equation. This study focuses on analyzing the lubrication behavior of finite journal bearings under operational conditions, considering the influences of additives and thermal effects. To address lubricant additive issues, the generalized Reynolds equation is utilized. The application of the finite difference method to relevant equations enables the derivation and numerical solution of load capacity and pressure expressions. By accounting for viscosity changes and thermal impacts, the study provides load capacity graphs to visualize their effects.

Governing Equation:



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ENABLING CLOUD STORAGE AUDITING VIA VERIFIABLE KEY UPDATE OUTSOURCING

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Abstract: Addressing the critical issue of key exposure resistance in cloud storage auditing has been a significant concern in security applications. Recent research has focused on finding solutions to this problem, which typically involve clients regularly updating their secret keys. However, this approach can be burdensome for clients with limited computational resources, such as mobile devices. To enhance client transparency during key updates, we propose a novel paradigm in this paper: cloud storage auditing combined with verifiable outsourcing of key updates. In our proposed model, clients can delegate the task of key updates to a trusted third party, alleviating the need for them to manage this process. We extend the role of the third-party auditor (TPA) from existing public auditing designs to include responsibility for both storage auditing and key security updates, thus preventing key exposure. Our scheme ensures that the TPA maintains only an encrypted copy of the client's secret key while performing these tasks on behalf of the client. During data transfer to the cloud, the client retrieves the encrypted secret key from the TPA. Additionally, our architecture provides mechanisms for the client to verify the authenticity of the encrypted secret keys supplied by the TPA. These features aim to make the auditing process with key exposure resistance as transparent as possible to the client. We formally outline the definition and underlying security model of this paradigm. Our implementations, rigorously tested and simulated, demonstrate the safety and effectiveness of the proposed designs in practice.

Keywords: Cloud storage, outsourcing computing, cloud storage auditing, key update, verifiability.

I. INTRODUCTION

One of the most crucial safety measures in cloud storage is auditing, which is implemented to ensure the authenticity of information kept in the cloud. Recent years have seen extensive studies into the topic of auditing protocols for cloud storage. One of the primary concerns of these protocols is how to achieve high bandwidth and computation efficiency, which is relevant to the auditing process as a whole. Therefore, the Homomorphism Linear Authenticator (HLA) technique is investigated, as it allows the auditor to verify the integrity of the data in the cloud without retrieving the whole data, thus reducing the computational and communication overheads of auditing protocols.

Many auditing protocols for cloud storage like have been proposed using this method. Auditing of cloud storage services should also take privacy measures seriously. A third-party auditor (TPA) is introduced to assist the client in performing periodic checks of the cloud's data integrity, thereby reducing the client's computational burden. After the TPA has executed the auditing protocol multiple times, it may be able to obtain the client's data. Client data in the cloud is kept private using auditing protocols. What's more, the auditing of cloud storage has addressed the question of how to facilitate data-dynamic operations.

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DESIGN AND STRUCTURAL ANALYSIS OF MILITARY VEHICLE LAUNCHED BRIDGE

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Abstract: The Armored vehicle launched bridge (AVLB) is an assault bridge employed during battles. The existing AVLB has huge capacity. However a need was identified to increase its Load bearing capacity above with higher factor of safety while engaged in military operations. This report presents the improved design of AVLB. The Sections installed in design promotes high moment of inertia and stiffness which makes it resistant to bending moment. The web of Sections provides resistance against shear force. In this project work has been taken up on the different aspects of Materials like Aluminum and Duralumin materials to cover the research gaps to present the results. The 3D Model of AVLB is created in Catia. And finite element analysis was performed on the model of AVLB to identify the highly stressed components of design for static structural loads. The analysis using Finite Element Method (FEM) is used to determine shapes and this has been accomplished by the commercial finite elements package Ansys. And all the efforts made to ameliorate the original AVLB, along with additional safety to AVLB design by considering the factor of safety value.

I- INTRODUCTION

The Armored Vehicle Launched Bridge (AVLB) is an armored vehicle based on the M60 Patton tanks hull and used for the launching and retrieval of a 60-foot (18 m) scissors-type bridge. The AVLB consists of three major sections: the launcher, the vehicle hull, and the bridge. The M60 AVLB or Armored Vehicle Launched Bridge was introduced in 1963.

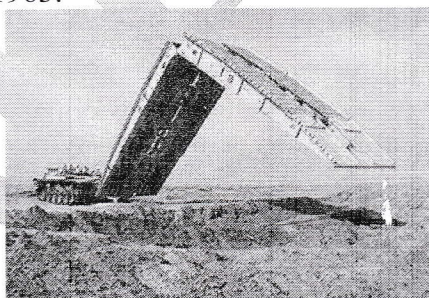


Fig 1.1: M60A1 Armored Vehicle Launched Bridge (AVLB)

This combat engineer vehicle was developed by the US Army Engineer Research & Development Laboratories under contract with General Dynamics to replace the previous M48 AVLB. It was designed to launch bridge for tanks and other wheeled combat vehicles across trenches and water obstacles in combat conditions. A total of 400 armored bridge launchers and bridges were built. 125 M60 AVLBs of all variants were constructed.

Design & Development:

In the early 1950s, the prototypes for US military Armored Vehicle-Launched Bridge (AVLB) were based on the M48A2 hull. This AVLB prototype launcher assembly used an M48 tank with its turret removed

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ADVANCED PLANT LEAF DISEASE DETECTION SYSTEM

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Abstract: Agriculture is the mainstay of the Indian economy. Almost 70% people depend on it & shares major part of the GDP. Diseases in crops mostly on the leaves affects on the reduction of both quality and quantity of agricultural products. Perception of human eye is not so much stronger so as to observe minute variation in the infected part of leaf. In this paper, we are providing software solution to automatically detect and classify plant leaf diseases. In this we are using image processing techniques to classify diseases & quickly diagnosis can be carried out as per disease. This approach will enhance productivity of crops. It includes several steps viz. image acquisition, image pre-processing, segmentation, features extraction and neural network based classification.

Keywords: HSI, SGDM, GLCM, ANN, GUI, K-means clustering, BPNN, CIELAB color space

I. INTRODUCTION

Agriculture has played a key role in the development of human civilization. If there is decrease in agro products, total economy will get affected. Therefore judicious management of all input resources such as soil, seed, water, fertilizers etc. is essential for sustainability. As diseases are inevitable, detecting them plays major role. One can refer incident that occurred in 2007, Georgia (USA), it is estimated that approximately 539 USD was the loss incurred due to plant diseases as well as controlling them. The naked eye observation of farmers followed by chemical test is the main way of detection and classification of agricultural plant diseases. In developing countries, farming land can be much larger and farmers cannot observe each and every plant, every day. Farmers are unaware of non-native diseases. Consultation of experts for this might be time consuming & costly. Also unnecessary use of pesticides might be dangerous for natural resources such as water, soil, air, food chain etc. as well as it is expected that there need to be less contamination of food products with pesticides.

There are two main characteristics of plant disease detection machine-learning methods that must be achieved, they are: speed and accuracy [1]. There is need for developing technique such as automatic plant disease detection and classification using leaf image processing techniques. This will prove useful technique for farmers and will alert them at the right time before spreading of the disease over large area. Solution is composed of four main phases; in the first phase we create a color transformation structure for the RGB leaf image and then, we apply color space transformation for the color transformation structure. Then image is segmented using the K-means clustering technique. In the second phase, unnecessary part (green area) within leaf area is removed. In third phase we calculate the texture features for the segmented infected object. Finally, in the fourth phase the extracted features are passed through a pre-trained neural network [1].

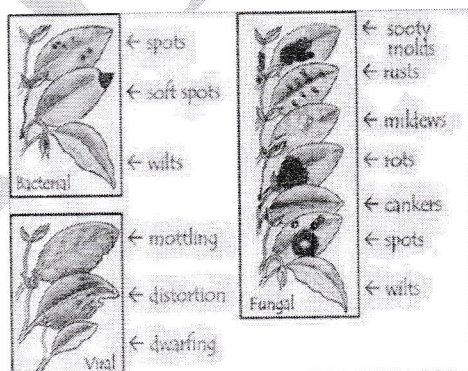


Figure 1. Types of Diseases [3] .

PROXY-BASED IDENTITY VERIFICATION AND REMOTE DATA INTEGRITY VERIFICATION IN PUBLIC CLOUD SERVICES

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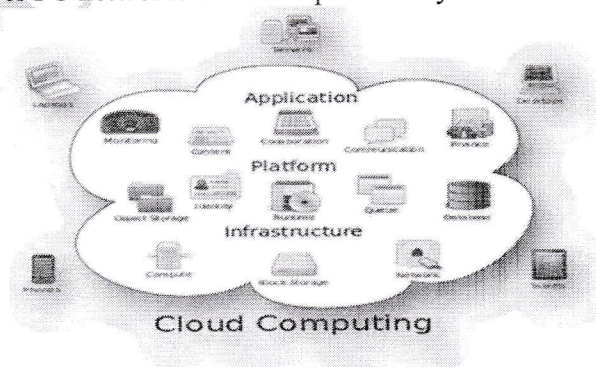
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Abstract: As the use of public cloud servers (PCSs) continues to grow with the rapid advancement of distributed computing, addressing new security challenges becomes imperative to enable more users to securely store their data in the cloud. When users are unable to directly access PCSs, they often delegate a proxy to manage and transfer their data. Additionally, ensuring the integrity of remote data without exposing the entire dataset presents a significant security concern in distributed storage environments. To address these challenges, we propose a novel model for proxy-oriented data uploading and remote data integrity checking based on identity-based public-key cryptography, termed Identity-Based Proxy-Oriented Data Uploading and Remote Data Integrity Checking in Public Cloud (ID-PUIC). We provide formal definitions, framework models, and security models for this approach. Subsequently, we design a robust ID-PUIC scheme leveraging bilinear pairings. The proposed ID-PUIC scheme offers provable security, leveraging the computational Diffie-Hellman problem. Furthermore, our ID-PUIC scheme is practical and flexible, capable of supporting various types of remote data integrity checks—private, named, and public—based on user permissions.

Keywords: Cloud Computing, Identity-Based Cryptography, Proxy Public Key Cryptography, Remote Data Integrity Checking.

I. INTRODUCTION

Cloud computing (equipment and software) is used and shared remotely over a network in what is known as "the cloud" (usually the Internet). In structure graphs, a cloud-shaped picture is commonly used to represent the complex information it contains, hence the name. Through distributed processing, a client's information, code, and estimation can be shared amongst multiple, geographically dispersed organizations. System hardware and software for appropriate processing are available online from supervised pariah groups. Modern programming languages and server PC networks are made possible by these establishments.



Structure of cloud computing

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EXPLORING LANGUAGE ENRICHMENT THROUGH THE ANALYSIS OF LITERARY TEXTS

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Abstract: This study investigates the role of literary texts in enhancing language skills and proficiency. Utilizing a qualitative approach, the research delves into how literary works contribute to language development across various domains, including vocabulary expansion, grammatical understanding, and stylistic nuances. Through detailed textual analysis and interpretation, the study explores how exposure to diverse literary genres fosters linguistic competence and fluency. Additionally, the research examines the cognitive and affective dimensions of engaging with literary texts, highlighting their potential to stimulate critical thinking, empathy, and cultural awareness. Drawing on insights from linguistics, literature, and education, this study offers valuable perspectives on leveraging literary texts as effective tools for language enhancement.

Keywords: Literature, language education, technical students, cultural values, ethical awareness, empathy, critical thinking, integration.

Introduction

Language is a means of communication and Literature is a record of writings or works by scholars in a language. Literature not only represents the culture and tradition of the society but also depicts the everlasting ethical values. Certainly, language helps one to gather and grasp knowledge from technical subjects and to acquire character and conduct from literary sources. Moreover, Literature is a peculiar source, which aims at the reformation of its readers as it equips them with a sense, which is beyond perception and comprehension. It has such a tremendous power and potential. "When all other voices fail, the voice of conscience, the voice of Literature and the wise prevail". It sublimates the basic instincts of a human being and makes him a normal person. Thus, literature has become an indispensable element of education, which moulds a person into a humane personality.

Nowadays, if we view the contents of English in some technical English courses, prescribed for Engineering students; they seem to be dry, vague and shallow. The students are not provided with any profound knowledge on the topics chosen for them. This type of course material has been introduced with a view to make the students to be aware of all these current issues through media. Coming to the very purpose of technical English, i.e. to impart to the students the skills that they need in their academic and later in their professional pursuits, the intention is beneficial. Regarding this, in the course, they opined that the old course materials comprising of anthologies or prose selections based on old methodology, i.e. classroom lectures are not conducive to the development of study skills and the communicative competence in the students. Hence, they thought that there is a need to develop an appropriate

DESIGN AND ANALYSIS THERMOELECTRIC REFRIGERATOR

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Abstract: In Today's world global warming is being increasing year by year. There are many reasons like pollution, deforestation, water contamination, etc...In coming years the major problem before us is depletion of ozone layer which is caused by the release of CFC's. Some of the equipment which causes this effect is refrigerators, AC's. In this project we are mainly focusing on a solution to control this problem we have focused on refrigerators which releases CFC's. Here we are designing a mini solar based refrigerator which is cheaper as well as eco-friendly. In this project we are using solar panels for charging a Lead Acid Battery (12V, 1.2 Amp hrs), a peltier thermoelectric device when connected to battery generates cool effect and hot effects depending on the mode required by the user. Since we are using this for fridge we need only cool mode. A peltier thermoelectric device is connected to the battery to generate cooling effect. We need to display the voltage for that we are using ADC which is given to the controller. For this ADC we are giving a clock pulses through 555 timers to perform its operation. The aim of the project is to design and analyze a compressor less refrigerator system. A parametric model of the refrigerator is designed using 3D modeling software Catia and analyzes using Ansys Software. Catia is the standard in 3D product design, featuring industry-leading productivity tools that promote best practices in design.

I- INTRODUCTION

Evaporative cooling in refrigeration is an old idea but due to its dependency on outside environment (relative humidity, dry bulb temperature) it is limited to certain parts of world. Some of the examples for evaporative cooling are clay pots used in India for cooling the drinking water. In Mexico, fishermen use freezer to produce ice for storing fish.

In Australia, Coolgardie safe are used for refrigeration purpose. In this project we have tried to minimize the effect of outside environment. With time many techniques, laws and methods have been discovered by scientists. The Seebeck and Peltier Effect account to be one of them.

When a closed circuit of two dissimilar metals and two junctions is formed, a current will flow between the junctions or the circuit. This phenomenon is known as the Seebeck effect. The effect takes place when the temperature between the junctions shows difference. The greater the temperature difference, the more will be the electric current between the junctions. This is the fundamental principle used in the thermocouple. The combinations of metals or semiconductors affect the flow of current. Jean.C.Peltier, a French watchmaker and an amateur scientist discovered a reverse effect of the Seebeck. He discovered that using joined dissimilar metals heat pump can be made. He found that by the use of two dissimilar metals if

ENHANCING CONCRETE STRENGTH AND DURABILITY THROUGH PARTIAL CEMENT REPLACEMENT WITH MARBLE DUST

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Abstract: Marble powder, a byproduct of the marble industry, is garnering significant attention in research circles due to its potential applications in civil engineering and design. Despite advancements in manufacturing processes, the marble sector continues to generate substantial waste, with 30 to 40 percent of production ending up as waste material. This waste poses environmental challenges, contributing to contamination in modern society. In an effort to address this issue of waste generation, this study explores the partial replacement of cement with marble powder in concrete production. Specifically, varying percentages of marble powder (5%, 10%, 15%, 20%, and 25%) are substituted for cement in Grade M40 concrete. The objective is to assess the compressive strength of the resulting concrete mixtures after 7 and 28 days of curing. Experimental results indicate that the compressive strength of Grade M40 concrete remains largely unaffected when 15% to 20% of cement is replaced with marble powder. This suggests that incorporating marble powder into concrete mixtures at these percentages does not compromise strength. However, substituting a portion of concrete with marble powder may slightly impact the durability of the concrete. For this study, Grade 53 Ordinary Portland Cement (OPC) and 20 mm heavy aggregate were utilized. Notably, substituting 15% of cement with marble powder resulted in improved compressive strength compared to ordinary concrete mixtures. This research sheds light on the potential of marble powder as a sustainable alternative in concrete production, offering both environmental and performance benefits.

Key words: Marble dust, Cement, Fine aggregate, Coarse aggregate.

1. INTRODUCTION

Concrete is a major contribution to the globe in the current stage of development. Many magnificent buildings have been made with the use of this concrete from antiquity to the present

- (1) With the aid of this concrete, constructions such as buildings, old buildings, roads, bridges, highways, dams, and others are erected
- (2) Cement is the primary constituent in each of the several primary components that make up concrete. Cement is being used up quickly in concrete as a result of the expanding demands brought on by
- (3)

OPTIMIZED DESIGN AND ANALYSIS OF AIR HANDLING UNIT LEVERAGING CAE TOOLS

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Abstract: Air Handling Unit is defined as a self-contained unit that the conditions of air vary while passing through it and reach to the desired temperature and humidity. To perform variations in weather conditions various processes such as heating, cooling, humidification, dehumidification and mixing are applied. In this research thermodynamic modeling and analysis of air handling units approaching minimum energy consumption is achieved. The objective function for analyzing is pressure drop of air crossing coil per cooling and heating load of the system. This function comprises all thermal and geometrical parameters of the coils such as coil surface area, number of rows, fin spacing and air side pressure drop of the coil. The optimization results are to compose of minimum pressure drop, optimum area, and optimum number of rows and fin spacing. The effects of varying the cooling and heating load, fin efficiency and the surface area of the coil on fan power consumption are investigated as well. A simulation results to experimental results, gained with a test bed. This method is used to design the unit in modeling tool Catia, which is simple method as compared with the other design methods. These work gives the combination of theoretical and software tool to provide a comparative analysis in the Ansys for the duct size.

I- INTRODUCTION

In the present day, as the population increases the need for comfortness also increases. The human being needs more comfortness because of inferior environment (like light, sound, machine which produce heat). Sound, light and heat affect human comfort a lot. They may adversely affect the human comfort positively or negatively. Researchers suggest that, human body is used to be comfortable at a temperature of 22°C to 25°C. When the temperature of room is lower or higher than this temperature, than the human body feels uncomfortable. This is because, the human body is structured in a way that, it should receive a certain amount of light, failure to which it can cause sunburns and other skin conditions.

There are many types of air conditioning system like window air conditioners, split air conditioners etc. but these AC's system are used in small room or office where cooling load required is low. When the cooling load required is very high like multiplex building, hospital etc. central AC's system are used. In central AC's system the cooled air is directly not distributed to the rooms. The cooled air from the air conditioning equipment must be properly distributed to rooms or spaces to be cold in order to provide comfort condition. When the cooled air cannot be supplied directly from the air conditioning equipment to the spaces to be cooled, then the ducts are installed. The duct systems convey the cold air from the air conditioning equipment to the proper air distribution point and also carry the return air from the room back to the air conditioning equipment for reconditioning and recirculation.

Air Handling Unit (AHU)

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