SRI BHARATHI

ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kaikkurichi, Pudukkottai -622 303

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NAAC DOCUMENTS

Quality Indicator Frame Work

Criterion – 3

Research, Innovations and Extension

Submitted by

IQAC

Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
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Kaikkurichi, Pudukkottai - 622 303.

Date : .....

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the total number of Research papers published per faculty in the journals notified on UGC care list during last five years is listed below.

Academic Year	2022-2023	2021-2022	2020-2021	2019-2020	2018-2019
Number of Research papers in journals	5	9	17	1	2
Total number of Research papers in journals	34				

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Criteria 3	Research, Innovations and Extension	110

3.3.1 Number of research papers published per teacher in the Journals notified on UGC CARE list during the last five years

S.No	Title of paper	Name of the author/s	Department of the faculty	Name of journal	Academic Year of publication	ISSN number	Page No
1	A Novel Approach Towards Utilization of IOT in Smart Farming	Dr.V.Vijayasaro	ECE	International Journal Of Innovative Research In Technology (IJIRT)	2022-2023	2349-6002	8
2	Compressed sensing image reconstruction using efficient algorithm	Mrs.M.Sathya	ECE	International Journal of Multidisciplinary research transactions (IJMRT)	2022-2023	2663-2381	9
3	AI Enhanced OT Security Tool-Gail	G.Sugapriya	CSE	International Journal of Research and Analytical Reviews (IJRAR)	2022-2023	2349-5138	10
4	Ailment Predicted System	G.Rajalakshmi	CSE	International Journal of Research and Analytical Reviews (IJRAR)	2022-2023	2349-5138	11
5	An Evaluation On Plant Disease Prediction Using Deep Learning Techniques	Ms.S.Yogalakshmi	CSE	International Journal of Research and Analytical Reviews (IJRAR)	2022-2023	2349-5138	12
6	Self Monitoring System For Vision Based Application Using Deep Learning	G. Sugapriya	CSE	International Journal Of Advanced Research In Computer And Communication Engineering	2021-2022	2319-5940	13

S.No	Title of paper	Name of the author/s	Department of the faculty	Name of journal	Academic Year of publication	ISSN number	Page No
7	Trust Centric Privacy Preserving Blockchain Based Digital Certificate Locker	S.Jayapratha	CSE	International Journal Of Advanced Research In Computer And Communication Engineering	2021-2022	2319-5940	14
8	College Management System	P.Subha	CSE	International Journal Of Advanced Research In Computer And Communication Engineering	2021-2022	2319-5940	15
9	Smart Classroom Attendance System using Face Recognition	G.Bhuvaneswari	CSE	International Journal Of Advanced Research In Computer And Communication Engineering	2021-2022	2319-5940	16
10	Known and Unknown Face Smart Home Door Lock System using AI and Edge Computing	K.Priyanka	CSE	International Journal Of Advanced Research In Computer And Communication Engineering	2021-2022	2319-5940	17
11	Envision of Crops to Prevent and Reduce the Usage of Pesticides and Fertilizers using Raspberry PI & AI	Mrs.R.Yogeshwari	ECE	International Journal of Advanced Research in Computer and Communication Engineering(IJARCCE)	2021-2022	2319-5940	18
12	Real Time Detection and Reporting of Road Potholes using GPS	Mrs.V.Nithya Poorani	ECE	International Journal of Advanced Research in Computer and Communication Engineering(IJARCCE)	2021-2022	2319-5940	19

S.No	Title of paper	Name of the author/s	Department of the faculty	Name of journal	Academic Year of publication	ISSN number	Page No
13	An Experimental Study of Waste Water Treatment By Using Natural Coagulants	Ms.R.Manju	Civil	International Journal for Modern Trends in Science and Technology	2021-2022	2455-3778.	20
14	Non Linear Regression Model For Compressive Strength of Silica Fume Concrete	Dr.S.Thilagavathi	Civil	International Journal for Research in Engineering Application & Management	2021-2022	2454 - 9150	21
15	Artificial Vision Aid For Blind People Using Optical Character Recognition	Mrs.R.Yogeshwari	ECE	Journal Of Information And Computational Science	2020-2021	1548-7741	22
16	Implementation of An Efficient Multiplier Using Dadda Algorithm	Ms.K.A.Muthulakshmi	ECE	Journal Of Information And Computational Science	2020-2021	1548-7741	23
17	Phase Measurement Technique for Synchronous Devices in FPGA Using XOR Gates	Ms.K.A.Muthulakshmi	ECE	International Journal of Electronic Devices and Networking (National Conference on Signal Processing, Communication &Networking-2021)	2020-2021	2708-4477	24
18	Implementation of Arithmetic Logic Subsystem in a Sliced Processor	Mr.C.Palaniappan	ECE	Annals of the Romanian Society for Cell Biology	2020-2021	1583-6258	25
19	IOT based Robust Method for Smart Industry Pollution Monitoring and Controlling System	Mrs.V.Nithya Poorani	ECE	Journal Of Information And Computational Science	2020-2021	1548-7741	26
20	Numerical simulation on Reinforced Concrete Beam With Different Cover Size Under Two Point Bending Load	Mrs.R.Padma Rani	Civil	International Journal for Modern Trends in Science and Technology	2020-2021	2455-3778.	27

S.No	Title of paper	Name of the author/s	Department of the faculty	Name of journal	Academic Year of publication	ISSN number	Page No
21	Secure Electronic Health Record Sharing With Sensitive Base Access Control	Ms.P.Subha	CSE	International Journal of Advanced Research in Computer and Communication Engineering	2020-2021	2319-5940	28
22	IOT Enabled Smart Voting System using Face Biometric Features	Ms.G.Bhuvaneswari	CSE	Journal of Information and Computational Science	2020-2021	1548-7741	29
23	Bus Pass Registration and Renewal System	Ms.G.Bhuvaneswari	CSE	Journal of Information and Computational Science	2020-2021	1548-7741	30
24	Face Biometrics by Own Password in Online Social Networks	Ms.G.Sugapriya	CSE	Journal of Information and Computational Science	2020-2021	1548-7741	31
25	An efficient encrypted medical data storage using two clouds with duplicate data generation techniques	Ms.S.Jayapratha	CSE	International Journal of Advanced Research in Computer and Communication Engineering	2020-2021	2319-5940	32
26	Deep Learning Techniques for Crop Photosynthetic from Leaf Image	Mrs.G.Sasikala	CSE	Journal of Information and Computational Science	2020-2021	1548-7741	33
27	Gene Based Disease Prediction using Semi-Supervised Learning	Mrs.G.Sasikala	CSE	Journal of Information and Computational Science	2020-2021	1548-7741	34
28	Android Based Efficient Road Safety Measures and Driver Behaviour Monitoring System	Ms.K.Priyanka	CSE	International Journal of Advanced Research in Computer and Communication Engineering	2020-2021	2319-5940	35

S.No	Title of paper	Name of the author/s	Department of the faculty	Name of journal	Academic Year of publication	ISSN number	Page No
29	Time based costing of energy storage system with optimal scheduling and dispatch under demand	Mr.J.Sathyaraj	EEE	Materials Today : Proceedings	2020-2021	2214-7853	36
30	Integration of 3D MEMS Accelerometer Sensor	Mrs.S.Susila Devi	EEE	Annals of the Romanian Society for Cell Biology	2020-2021	1583-6258	37
31	A Graphical User Interface Based Heart Rate Monitoring Process and Detection of PQRST Peaks from ECG Signal	Mr.S.Udhayanan	ECE	Springer	2020-2021	2193-1801	38
32	The impact of advanced technological developments on solar PV value chain - material proceedings	Mr.J.Sathyaraj	EEE	Materials Today : Proceedings	2019-2020	2214-7853	39
33	Cloud Resource Allocation and Optimization: A Review	Mr.K.Swaminathan	CSE	Journal of Computational and Theoretical Nano Science	2018-2019	1546-1963	40
34	A Smart sensor network localization for electric grids	Mrs.V.Kavitha	ECE	Springer	2018-2019	2193-1801	41

© March 2023| IJIRT | Volume 9 Issue 10 | ISSN: 2349-6002

A Novel approach towards utilization of IoT in Smart Farming

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Abstract: Smart agriculture is an integrated platform that combines cloud computing, Internet of Things, and Data mining. Farming is basic need to accommodate daily routine and it is essential for estimate the growth of the nation. To improve the economy of the country, we should focus on the growth of agriculture. The objective of this paper is to modernize the agriculture and focus to enhance efficiency and reduce human labor in the work place. IoT plays a key role and be a present and future for the entire field around us. IoT devices are widely used by all peoples to make their life simple and intelligent. The primary work of the system is to maintain and improve crop productivity. Our Proposed System uses four different sensors with real time update on the status the sensors provide unlike existing systems which provides the status from time to time. The sensors that used helps in knowing the soil moisture, soil's ph. value, water level in the field.

Keywords: IoT, Smart Agriculture, Sensors, cloud computing.

INTRODUCTION

Smart Farming future will be deployed on Internet of Things (IoT)." There will be number of challenges and crucial part while transforming "Traditional to Modern Technology". While comparing traditional farming with smart farming is efficient, there are tremendous advantages such as can maintain data easily hence track of crops growth, maintain adequate water, reduces costs, increase productivity. IoT Technology is one of the rapidly demanding area and connected all peoples and things in anytime at anywhere. IoT is an intuitive interconnectivity between digital world and real world and used in various fields such as smart health services, smart education, smart city[1].

As long as population is growing and to avoid damage due to natural disasters, agriculture should grow to fulfil the need and accommodate the demand within our resources[2]. In 2050 the global population predicted as 9 billion and humans cannot able to present in farmland for 24 hours. So there is need of change in agriculture to satisfy more population. The farmlands should be monitor continuously due to unpredictable weather[4]. IoT applications in smart farming also includes farm vehicle tracking, livestock monitoring, storage monitoring and other farm options.

The advancement of science and technology, the worldwide GDP has risen consistently. Accordingly, the presence of this reality has encouraged the improvement of smart farming, which use sensors and irrigation systems to manage crops as they grow. With sensor-based computer applications, more precise information about the crop, soil, and environment may be gathered. It advances excellent cycle and unrefined substances all through the whole item process. This is because utilizing the Internet of Things in smarter agriculture makes it more competitive than traditional methods. Combined with IoT-based smart agriculture technologies, natural rural farming and family cultivating may see an advantage. It is the situation that between agricultural producers and IoT technology, a digital breach has occurred, thus farmers are not vulnerable to IoT attacks Supportable utilization of water and information and treatment streamlining will permit farmers to create more food while additionally saving the climate. To include agriculture in smart use of natural resources, usage of technologies such as remote control, decision support

IJMRT: Volume (5), Issue 6, 2023
International Journal of Multidisciplinary Research Transactions
(A Peer Reviewed Journal)
www.ijmrt.in

ISSN (Print):2663-2381
ISSN(Online):2663-4007

Compressed Sensing Image Reconstruction Using Efficient Algorithm

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DoI: https://doi.org/10.5281/zenodo.7883210

Abstract

Compressed sensing is a new information sampling theory and it's done for acquiring sparse (or) compressible data with much fewer measurements. This is particularly important for some imaging applications such as magnetic resonance image or in astronomy. In many practical situations, the noise behavior is impulsive and that the probability density function has very complex calculation than Gaussian. This motivates a number of impulsive noise suppression methods. Therefore, a new method is called robust CS is applied, following the principle of robust statistics which is using a convex but quadratic cost function on the residuals. By using a robust cost function on the residuals, we are able to suppress large outliers in the measurement noise. It also shows that an iterative algorithm can be developed under minimization– majorization framework and have established a theoretical guarantee on the improvement of the upper bound of the recovery error. The proposed method can be used to improve Cs recovery depend upon an inspection of the residuals for impulsiveness.

Keywords: Image Compression, Robust statistics, Compressed sensing.

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

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AI ENHANCED OT SECURITY TOOL-GAIL

Author: Mrs.G.Sugapriya(AP/CSE), Ms.J.Rilwana Parveen, Ms.S.Suriya Jothi, Ms.C.Saranya

ABSTRACT: OT networks are complex and involve various devices, making it challenging for traditional cybersecurity solutions to detect new attack vectors. Artificial Intelligence and Machine Learning can be used to develop an AI-based tool that can help discover devices and hidden patterns while monitoring incoming and outgoing traffic for unusual behavior. This tool is especially useful for OT devices that have limited processing power and require behavior-based detection capabilities. The tool is designed to process real-time operational data, including industrial protocols such as DNP 3.0, Modbus, and IEC 101. Once a threat or anomaly is detected, the tool sends alarms to security admins and suggests corrective actions to minimize damage to the OT systems. Additionally, the tool includes an in-built dashboard to help admins diagnose and respond to potential threats more efficiently.

Keywords: OT networks, Devices, Cyber security solutions, Artificial Intelligence,Machine learning, AI based tool,Hidden patterns,Incoming and outgoing traffic,Behaviour based detetction,Real time operational data ,Industrial Protocols,Threat or Anomaly detection,Alarms,Corrective action,Dashboard

1.INTRODUCTION:

Operational Technology (OT) networks are critical components of modern infrastructure and are used in industries such as energy, transportation, and manufacturing. These networks involve a vast array of devices, often with different communication protocols, which can be difficult to secure against cyber threats. Traditional signature-based cybersecurity solutions are no longer sufficient to protect these networks as attackers continue to develop new and sophisticated attack vectors, such as zero-day exploits, that can evade detection.

Artificial Intelligence (AI) and Machine Learning (ML) have shown great potential for detecting threats and anomalies in real-time, allowing for faster and more effective response to cyber attacks . In this paper, we propose an AI-based tool that can discover devices and hidden patterns, monitor incoming and outgoing traffic, and detect any deviations in behavior within the OT ecosystem. The tool will process large amounts of real-time pipeline operational data using Industrial protocols such as DNP 3.0, Modbus, and IEC 101, and alert security administrators of any suspicious activity.

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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AILMENT PREDICTED SYSTEM

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Abstract : A Disease Prediction System is a computerized system that uses machine learning algorithms to predict the likelihood of a person developing a particular disease or medical condition based on their health data and medical history.The system collects data such as age, gender, family medical history, lifestyle habits, and symptoms from the user and analyzes it to make predictions. The data is usually collected through a questionnaire or input from a wearable device.The machine learning algorithm used in the system is trained on a large dataset of medical records to identify patterns and make accurate predictions. The accuracy of the prediction model depends on the quality and quantity of data used to train the algorithm.The Disease Prediction System has several benefits, including early detection of diseases, personalized treatment plans, and improved patient outcomes. It can also help healthcare providers prioritize patient care, reduce healthcare costs, and improve the efficiency of healthcare systems.However, there are also potential challenges and limitations associated with Disease Prediction Systems, such as privacy concerns, bias in the data used to train the algorithm, and the need for careful interpretation of the results by healthcare professionals.Overall, Disease Prediction Systems have the potential to revolutionize healthcare by providing personalized and proactive care, but further research and development are needed to fully realize their potential.

Keywords: Disease Prediction System, machine learning algorithm, health data, medical history, questionnaire, wearable device, personalized treatment, healthcare providers, privacy concerns, bias, proactive care, healthcare.

1.INTRODUCTION:

A disease prediction project involves developing a predictive model that can identify individuals who are at high risk of developing a specific disease. The project typically involves collecting relevant medical data, such as demographic information, medical history, genetic information, and lifestyle factors. Machine learning techniques are then applied to this data to develop a predictive model that can identify individuals at high risk of developing the disease. The model can be used to inform patient care by enabling early detection and intervention, which can lead to better health outcomes and lower healthcare costs. Some potential areas for enhancing a disease prediction project include incorporating more types of medical data, using advanced machine learning techniques, personalizing the prediction model, providing explanations for predictions, and collaborating with healthcare providers to ensure clinical relevance. The project involves collecting medical data that may include demographic information, medical history, lifestyle factors, and genetic information.

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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AN EVALUATION ON PLANT DISEASE PREDICTION USING DEEP LEARNING TECHNIQUES

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Abstract : The principal agricultural products of India include rice, wheat, pulses, and spices. As our population is increasing rapidly the demand for agriculture products also increasing alarmingly. A significant quantity of data is being added from diverse agricultural fields. These data can be analysed to predict crop yield, examine soil quality, identify plant diseases, and determine how weather influences crop productivity. Crop protection plays a critical function in keeping agriculture produce. Animals, pathogens, pests, and weeds are to blame for the decrease in agricultural productivity. Automatic disease diagnosis of plants is made possible by machine learning techniques as Random Forest, Bayesian Network, Decision Tree, Support Vector Machine, etc. An overview of various existing AI strategies utilized for plant illness expectation was introduced in this paper. Programmed identification of sickness in plant helps in early finding and avoidance of illness which prompts an expansion in agribusiness efficiency.

IndexTerms - Plant infection expectation, Harvest efficiency, Support vector machine, Deep learning, Meteorological component, Visual side effects, Random forest.

I. INTRODUCTION

Smart farming practices address productivity, food security, sustainability, and environmental effect. Food production plays a significant part in the population growth that is occurring day by day, according to Turner et al. [2018]. The quality of the food products is crucial for excellent healthy human beings. For creating this healthy environment investigation of numerous element that produces a productive loss in agriculture needs to be done. Identification of diseased part, Image classification, Image processing in agriculture Dhingra et al. [2019] launch large area investigation on the detection of an abnormality in plant leaves.

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115174

SELF MONITORING SYSTEM FOR VISION BASED APPLICATION USING DEEP LEARNING

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Abstract: Designing a system for automatic image content recognition is a non-trivial task that has been studied for a variety of applications such as face detection, face recognition, person identification. Face recognition is one of numerous presentations of digital image processing. Automatic face detection is a complex problem which is concerned with the automatic identification of an individual in a digital image. But there are no solutions to detect faces automatically with low resolutions in various applications scenario. We can implement this project computer vision system to predict the screens which are near to their vision or not. This can tiredness the eyes and place stress on the torso because the backrest is no longer provided that support. Viewing distances that are too short may cause eyes to work harder to focus (convergence problems) and may require sitting in awkward postures. For instance, user may tilt their head backward or push chair away from the screen, causing you to automatically type with outstretched arms. But there is no alert system for measuring distance from monitor to eye. The minimum distance is 0.38 m (1.2 ft.) and maximum distance is 1.02 m (3.3 ft.). It can be achieved by using artificial intelligence. We can use web camera for capturing human head positions and separate the background from foreground head positions. If the distance is minimum to pre-define threshold value means, alert is automatically generated and intimate to users without using any sensors. And also extend the approach to design the parent children framework to send alert at the time of seeing unwanted websites.

Keywords: Online Results, Quotation Paper, Online Attendants

I. INTRODUCTION

In imaging science, image processing is processing of images using mathematical operations by using any form of signal processing for which the input is an image, a series of images, or a video, such as a photograph or video frame; the output of image processing may be either an image or a set of characteristics or parameters related to the image. Most image-processing techniques involve treating the image as a two-dimensional signal and applying standard signal-processing techniques to it. Images are also processed as three-dimensional signals with the third-dimension being time or the z-axis. Image processing usually refers to digital image processing, but optical and analog image processing also are possible. This article is about general techniques that apply to all of them. The acquisition of images (producing the input image in the first place) is referred to as imaging. Closely related to image processing are computer graphics and computer vision. In computer graphics, images are manually made from physical models of objects, environments, and lighting, instead of being acquired (via imaging devices such as cameras) from natural scenes, as in most animated movies. Computer vision, on the other hand, is often considered high-level image processing out of which a machine/computer/software intends to decipher the physical contents of an image or a sequence of images (e.g., videos or 3D full-body magnetic resonance scans). In modern sciences and technologies, images also gain much broader scopes due to the ever growing importance of scientific visualization (of often large-scale complex scientific/experimental data). Examples include microarray data in genetic research, or real-time multi-asset portfolio trading in finance. Image analysis is the extraction of meaningful information from images; mainly from digital images by means of digital image processing techniques. Image analysis tasks can be as simple as reading bar coded tags or as sophisticated as identifying a person from their face.

Computers are indispensable for the analysis of large amounts of data, for tasks that require complex computation, or for the extraction of quantitative information. On the other hand, the human visual cortex is an excellent image analysis apparatus, especially for extracting higher-level information, and for many applications — including medicine, security,

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115188

TRUST CENTRIC PRIVACY PRESERVING BLOCKCHAIN BASED DIGITAL CERTIFICATE LOCKER

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Abstract: Millions of students complete their education each year and go on to do higher studies or a corporate job. In this case student credentials are verified through a lengthy document verification process. This results in significant overhead as documents are transferred between institutions for verification. It is a costly, lengthy, and time-consuming procedure as university authorities invest millions of dollars in maintaining the entire process each year. The employer also takes plenty of time to counterfeiting certificates. A fake certificate generated by skilful scammers is always tough to identify and address as the original one. Therefore, there is a crucial need to upgrade the certification and verification process. This project introduced a Block chain based decentralized Student Verification platform that offers an easy way to issue, check, and verify educational certificates. The student's identity and document are both verified by matching the hashes already present in the Block chain. Also, in the proposed method the documents are linked to the student to another layer of verification. The implementation of this proposed platform can be used to issue, receive and verify the student and their certificates.

INTRODUCTION

1.1 Overview

Education verifications are a valuable tool in pre-employment background checks, since they confirm whether or not a candidate has earned the diploma or degree claimed, hence highlighting a candidate's qualifications and possibly revealing information about your candidate's honesty and integrity. An Education Verification search confirms the education degree, training, potential discrepancies before you hire. Sometimes referred to as an Education Background Check or an Education Check, this service is used to confirm educational experience at high schools, universities, colleges. To prevent tampering or reproduction by copier machines, most of the genuine educational institutions if scanned or photocopied, the matter/design would be far different than the original colour. In case of a void feature, the word COPY appears when an attempt is made to copy a degree. This feature will not be seen in the original document. However, if photocopied, the feature appears on duplicate copy.

1.2 Background of the Project

In this modern age, computers have verified the cause of their existence. The advent of computers in our society caused a lot of criticism on the danger it poses on the society. Critics of computer and new techniques express their fear on how computers will displace and replace all human skills thus resulting to mass unemployment. The presence of computer on virtually every field of today's fast life has proved the critic wrong as the invention of computers and new technologies continues to create additional jobs for those who identify themselves with computers and new technologies. This makes computes partner to human beings in any fields of human endeavour. Over the past decades, students' identification and verification has been a major problem in large institutions as documents, certificate and studentship can be forged at a great rate and easy way, using the computer negatively. Forgers fail to know that in this fast-moving world, the computer has equally served as an aid to decision making, verification and authentication.
Decisions are largely based on experience and principle. The value of every degree is the reputation of the institution and the students produced, hence, the greatest obstacle to any academic institution which is dishonesty and forgery has to be balanced with verification and authentication systems and processes.

1.3 Problem Statement

An important step in job recruiting is to go through résumés and job applications and check if they contain incorrect or fraudulent information. In fact, hiring the wrong person can be an expensive torment and may be extremely disruptive. Providentially, verification of the genuineness of a certificate or mark list issued is possible over using a proposed certificate verification system. Thus, most major companies use background checks as part of the standard practice for screening potential employees. Such measure "should be used within every organization that has serious consequences associated with security breaches," and more penetratingly for employees in highly sensitive or trusted

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115135

COLLEGE MANAGEMENT SYSTEM

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Abstract: College Management System provides a complete solution for your college administration. Student Information, Online Results, Quotation Paper, Online Attendants are the main modules of our College Management System. Dynamic and highly motivated, with a liberal & modern outlook on education and organization and a contemporary vision and working style, Educational Management are trying to Incorporate modern concepts, amenities & system to create a forward and vibrant institute, comparable with best & most modern in country. Educational Management Would is able to manage student personal information, Education statistic and highlight achievement and awards. Fee collection of the students is a cumbersome task and there would be a system in place to monitor the fee collection and report to the account department on regular basis. Finally account department to manage, monitor and generate all account detail during the operation of educational management. CMS is a comprehensive system that addresses all functional requirements that can be implementing in operator of college management. Below module, which scope the entire operational requirement of any College Management System.

Keywords: Online Results, Quotation Paper, Online Attendants

I. INTRODUCTION

College management software is prepared to maintain the day-to-day operations in a leading college. This software helps them to maintain the student and employee records. So, the maintain becomes easier. The main objective of college management system is to automate all functionalities of a college or university. Using this system you can manage all college management work like admission, fees submission, time table management and result declaration. Using this college management system, you can view or update data and information about students and staff easily. This system helps in managing the activity like student admission, student registration, fees submission. Admin can also retrieve information of employee student.

The college management systems can be used to store student information like attendance, fees, and student result etc. admin can create report regarding any student any time using this system. Using this system, you can register new student and their course details. You can submit students' fees and can check fees details anytime. You can create exam result and submit in this system. Student can check their result online by logging to the system. You can also add new employee in the system and can check details of the employee easily. Student can also check course detail online from this system.

Using this system, you can manage all information of all aspects of a college, its students, faculties, Departments, marks and other curricular activities. College management system provides the easiest way to manage all functionalities of a college. This system facilitates colleges to maintain the functionality related to college employees and their student.

College Management System can store and manage all data of the various departments of a college like Administration, Attendance, Staff details etc. using this system user can retrieve any information related to student, teacher and fees. Using this system teacher can check student attendance anytime. This system also help teacher to announce the result. College administration can also manage college work easily.

Admin can check leave, salary and other details of teacher any time. They can also create time table of classes from this system. The library module is used for the data process of library and book accessing for students and staff.

The Information System literature strongly suggests that planning for distributed information systems should be centralized. The planning activity should be a top-down process developed from the business planning and information system planning activities. A model of information system architecture should be developed which would serve as the basis for the management and control of information systems

II. LITERATURE REVIEW

Literature survey is the most important step in software development process. Before development the tool it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, then the next step is to determine which operating system and language can be used for developing the tool. Once the programmers start

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115141

SMART CLASSROOM ATTENDANCE SYSTEM USING FACE RECOGNITION

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Abstract: The COVID-19 pandemic outbreak has resulted in an unprecedented crisis across the globe. The pandemic created an enormous demand for innovative technologies to solve crisis-specific problems in different sectors of society. In the case of the education sector and allied learning technologies, significant issues have emerged while substituting face-to-face learning with online virtual learning. Several countries have closed educational institutions temporarily to alleviate the COVID-19 spread. The closure of educational institutions compelled the teachers across the globe to use online meeting platforms extensively. The virtual classrooms created by online meeting platforms are adopted as the only alternative for face – to-face interaction in physical classrooms. In this regard, student's attendance management in virtual classes is a major challenge encountered by the teachers. Student attendance is a measure of their engagement in a course, which has a direct relationship with their active learning. However, during virtual learning, it is exceptionally challenging to keep track of the attendance of students. Calling student's names in virtual classrooms to take attendance is both trivial and time-consuming. Thus, in the backdrop of the COVID-19 pandemic and the extensive usage of virtual meeting platforms, there is a crisis-specific immediate necessity to develop a proper tracking system to monitor student's attendance and engagement during virtual learning. In this project, we are addressing the pandemic-induced crucial necessity by introducing a novel approach. In order to realize a highly efficient and robust attendance management system for virtual learning, we introduce the Random Interval Query and Face Recognition Attendance Management System(hereafter, AI Present).

Keywords: virtual classroom, attendance, random interval query.

I. INTRODUCTION

A virtual classroom is an online teaching and learning environment where teachers and students can present course materials, engage and interact with other members of the virtual class, and work in groups together. The key distinction of a virtual classroom is that it takes place in a live, synchronous setting. Online coursework can involve the viewing of pre-recorded, asynchronous material, but virtual classroom settings involve live interaction between instructors and participants. Virtual classrooms and distance learning, as alternate technology-driven learning methods, have been growing at a reasonable pace. Virtual classrooms have been specifically in use by all sectors, including primary and higher education as well as corporate learning.

The increasing popularity of social and micro learning strategies, fostered by general social media platforms like YouTube and Twitter, and major educational technology disruptions liked X, have added to the increasing acceptance of virtual modes of learning. It is expected that the predominant use of virtual classrooms would increase by a whopping 16.2% compounded annual growth rate by 2023. Nevertheless, virtual classrooms have not yet been considered as a serious alternative or substitute for the contemporary face-to-face (F2F) learning.

Things have started to look different, however, in the wake of the current, novel corona virus COVID-19 pandemic, since the entire world is under lockdown. It is the time of the year when academic and teaching activities are in full swing in most parts of the world. The current pandemic situation has paved the way for a ground test of virtual classrooms as a prominent tool of learning in the current times.

II. LITERATURE REVIEW

Literature survey is the most important step in software development process. Before developing the tool it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, then the next step is to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool the programmers need lot of external supports. This support can be obtained from senior

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115145

KNOWN AND UNKNOWN FACE SMART HOME DOOR LOCK SYSTEM USING AI AND EDGE COMPUTING

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Abstract: Security is at most concern for anyone nowadays, whether it's data security or security of their own home. With the advancement of technology and the increasing use of IOT and AI, digital door locks have become very common these days. Face recognition system is broadly used for human identification because of its capacity to measure the facial points and recognize the identity in an unobtrusive way. The application of face recognition systems can be applied to surveillance at home, workplaces, and campuses, accordingly. The problem with existing face recognition systems is that they either rely on the facial key points and landmarks or the face embedded from the recognition process. Deep convolutional neural networks have been successfully applied to face detection recently. Despite making remarkable progress, most of the existing detection methods only localize each face using a bounding box, which cannot segment each face from the background image simultaneously. To overcome this drawback, this project present a face detection and identification method based on improved Mask R-CNN, named G-Mask, which incorporates face detection and recognition into one framework aiming to obtain more fine-grained information of face. This paper also investigates the robustness of the face recognition system when an unknown person is being detected, wherein the system will send an SMS Web link to the owner of the house through edge computing. The door lock can also be accessed remotely from any part of the world by using a door lock integrated server account.

Keywords: open smart door ,unknown person identification, send to SMS authorized person.

I. INTRODUCTION

Locks have been around for thousands of years. One can probably encounter all sorts of locks every day. From combination locks on school lockers to deadbolt locks on front doors, locks are all around us. Today there are many different kinds of locks. Some are very simple locks that open with a key or a combination of numbers. Others are extremely complicated locks that open with fingerprints or special electronic key cards. Today's locks feature many different types of mechanical and technological systems to increase security.

We were all familiar with traditional door locks on our front door.

we surely cannot forget the most frustrating thing come across in our life is practically walking out the front door suddenly recognized that you've locked the door and left your keys on the kitchen table. However, it could pose a serious security risk if your kids or pets are locked inside. Pin-and-tumbler locks are different, because they require a key to unlock them. Basic pin-and-tumbler locks have several spring-loaded pins inside a series of small cylinders. If you don't have the right key, one or more of the pins will remain in the way of the shear line.

This will prevent the cylinder from turning and the lock will remain closed. Designed to ensure privacy and securing access, nowadays you'd find a lock on almost everything - from home's front door to your smartphone. This goes to show how we, as a society, have come to value privacy and safety more and more over time. Choosing the right kind of door lock for yourself is, in our view, more important than ever. Let's first clarify the distinction between 'smart' and 'traditional' locks. Most people are not used to the term 'traditional' locks - we simply call them 'locks', essentially referring to the average door lock that is non-automated and has to be manually engaged.

II. LITERATURE REVIEW

Literature survey is the most important step in software development process before developing the tool it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, then the next step is to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool programmers need lot of external support. This support can be obtained from senior programmers.

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 6, June 2022

DOI: 10.17148/IJARCCE.2022.11678

ENVISION OF CROPS TO PREVENT AND REDUCE THE USAGE OF PESTISIDES AND FERTILIZERS USING RASPBERRY PI & AI

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Abstract: Tree physiology and condition are closely correlated with the immediate environment and therefore is linked to climate effects in that environment. Automatic seed, plant disease identification and recognition tools have proved to be a valuable source of data that assist decision making in farms. Artificial intelligence tools like Deep learning and Convolutional Neural Network (CNN) are gaining popularity in this field as they provide optimum solution for plant disease identification. Earlier, pest detection was done by manual observation. This method is arduous and prone to error. Several plant diseases cannot be recognized by bare human eyes. Because early disease occurrences are minute in nature. At the same time due to fear of attack of pest/disease, farmer uniformly sprays pesticides/fertilizers in whole farm which may lead to damage of soil as well as plants and also infected to humans as well. In order to improve the quality of production and yield in plants, it is essential to identify the symptoms in their initial stages and treat the diseases. The crop stress index is calculated to indicate plant water status using ambient temperature. In the end we are going to implement this process to prevent the human lives from harmful effects caused by pesticides.

I. INTRODUCTION

The accelerated population growth and the continuous shortage of labour in the area of agriculture, are two of the main motivations for the growingly interest in the area of robotics and precision farming. Here, agricultural vehicles play a very important role, and a lot of research activities related to navigation, path planning and control have been increasingly taking place in the past recent years. For instance, presents a new concept with a fleet of small robots providing a solution for soil compaction in a scalable and energy-efficiently manner. In the same line of small vehicles, here we present a controller for a skid-steered robot used for corn seeding tasks.

The production of crops is associate with many factors, for example, climate change, plant diseases, and insect pests. According to recent researches, about half of the crop yield in the world is lost to pest infestations and crop diseases. Crop pests cause significant damage to crops and mainly affect the productivity of crop yield, whether in developing or developed countries. There are too many types of insects and the number of individuals which belongs to the same species is enormous. However, traditional pest identification of insects is typically time-consuming and inefficient. Therefore, in order to improve the efficiency of agricultural production, a new effective recognition method should be proposed.

STEPS OF IMAGE PROCESSING

Image Acquisition

This is the first step or process of the fundamental steps of digital image processing. Image acquisition could be as simple as being given an image that is already in digital form. Generally, the image acquisition stage involves pre-processing, such as scaling ect..

Image Enhancement

Image enhancement is among the simplest and most appealing areas of digital image processing. Basically, the idea behind enhancement techniques is to bring out detail that is obscured, or simply to highlight certain features of interest in an image. Such as, changing brightness & contrast etc.

Image Restoration

Image restoration is an area that also deals with improving the appearance of an image. However, unlike enhancement, which is subjective, image restoration is objective, in the sense that restoration techniques tends to be based on mathematical or probabilistic models of image degradation.

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

ISO 3297:2007 Certified ⁜ Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.115212

REAL TIME DETECTION AND REPORTING OF ROAD POTHOLES USING GPS

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Abstract: Pothole is a depression in the normal surface of the road. Lack of bond between the bituminous surfacing and the base course below due to improper application of prime coat and track. Larger potholes sometimes cause breath holding accidents and loss of lives as they are not visible at night. Pathetic condition of roads is a boosting factor for traffic congestion and accidents. The driver must manually look for potholes on the road while driving sometimes, the driver encounters many risks such as he will be at a constant speed and suddenly there will be a pothole on the way. At these times, the risks of accidents are more. To ensure road surface quality it should be monitored continuously and repaired as necessary. Thus, we have developed a proposed design using Deep learning. Here, we have used image processing to detect the road potholes. The process is done by proposing an image - processing to detect potholes from satellite images. By using the algorithm mentioned above, the system can detect whether the road has potholes or not. Once the system finds the potholes, the system will send the data to micro controller received on the GPS location and it is sent via mail and SMS.

Keywords: Potholes, Transportation safety, Deep Learning, Image Processing, GPS

I. INTRODUCTION

The major challenges faced in the road transportation sector are: The roads are narrow, not of good quality and the road maintenance is low funded. The road vehicle handling capacity is also low, but the vehicle density on road is increasing. India, the most populous Country in the World and a fast-growing economy, is known to a gigantic network of roads. Roads are the presiding means of transportation in India today. Most of the roads in India are narrow and congested because of poor road maintenance. Roads have been flooded with the vehicular traffic. It has become difficult to manage this traffic.

The prime motivation is to make a vehicle intelligent enough to aid driver in various aspects. Over the last decades, there has been an enormous increase in the vehicle population. Pathetic condition of roads is a boosting factor for traffic congestion and accidents. One of the increasing problems the people facing are worsened road conditions. Because of reasons like rain, wear and tear makes the road difficult to drive and causes the expansion and contraction of ground water under the pavement.

When water freezes, it expands the proliferation of vehicles has led to problems such as traffic congestion and increase in the number of road accidents. Unexpected hindrances on road may cause more accidents and also because of the bad road conditions, fuel consumption increases. It actually focuses on building a user-friendly device that specializes in detecting potholes. As a result, the roads deteriorate and increase the users cost of transportation. This had led to road accidents. The other reason for traffic jams and accidents is the poor condition of roads. Potholes are formed due to heavy rains and dense movement of vehicles on the poorly constructed roads. Pothole formation has given rise to accidents and loss of human lives. Various methods like image and video analysis, and laser-based techniques have been proposed to detect pothole and also to provide information in terms of their shape, size, depth and volume, so that an appropriate maintenance measure can be taken.

ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans.

Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving".

Artificial intelligence (AI) is an area of computer science that emphasizes the creation of intelligent machines that work and react like humans. Some of the activities computers with artificial intelligence are designed for include:

An Experimental Study of Waste Water Treatment by Using Natural Coagulants

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Abstract: Coagulation is an important waste water treatment process used to reduce water turbidity. In this study, the effectiveness of a natural coagulant derived from aazadirachtaindica for turbidity removal from textile industry effluent. Other parameters such as p^H, Turbidity, Total suspended Solids, Total dissolved solids, and calcium contents are 9(Alkaline), 10.4 NTU, 270 mg/l, 2352 mg/l, 62.4 mg/l respectively. Based on the experimental results, it was concluded that natural coagulants which have been obtained from dolichas lablab, Azadirachtaindica, Cactus, Cicerarietinum have showed an merely equalant coagulants comparing to commercial alum. The turbidity removel efficiency for Dolichas lablab, Azadirachtaindica, Cactus, Cicerarietinum respectively were 37.5%, 63.2%, 31.47%, 34.49% against 59.46% obtained from alum.

KEYWORDS: Coagulation,Turbidity, Dolichas lablab, Azadirachtaindica, Cactus, Cicerarietinum

Check for updates

DOI of the Article: https://doi.org/10.46501/IJMTST0708026

Available online at: http://www.ijmtst.com/vol7issue08.html

As per UGC guidelines an electronic bar code is provided to seure your paper

To Cite this Article: R Manju and Dr. S Thilagavathi. An Experimental Study of Waste Water Treatment by Using Natural Coagulants. *International Journal for Modern Trends in Science and Technology* 2021, 7, 0708050, pp. 149-153. https://doi.org/10.46501/IJMTST0708026

Article Info. Received: 09 May 2021; Accepted: 07 July 2021; Published: 17 August 2021

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International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Vol-07, Issue-06, SEP 2021

Non Linear Regression Model for Compressive Strength of Silica Fume Concrete

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Abstract In the present research work, investigations were carried out to improve the performance of concrete in terms of strength by incorporating silica fume (SF) as mineral admixture in concrete. Parametric study was carried out by considering w/cm ratio, various percentage of SF and age of concrete as parameters to understand the effect of each parameter. The study was conducted for different water-to-cement (w/cm) ratios of 0.32, 0.35, 0.4 and 0.5. The SF proportion was varied from 0 to 15% with an increment of 5% and ages of concrete from 3 to 90 days were considered and experiments performed accordingly. The effects of above said parameters on the various properties of concrete such as workability, compressive strength and pH of concrete were investigated and the results of SF concrete were compared with the conventional concrete. From the results, it was observed that SF concrete showed consistent performance in all w/cm ratios, and maximum strength was achieved at 0.32 w/c . Longer curing period is found to be more beneficial for higher w/cm ratios, and the optimal amount of SF reduced the pH values, but the reduction is insignificant. A Multiple non-linear regression analysis was used to develop a statistical model to predict the strength and found to have good correlation between the observed and predicted values. From the model, It was observed that the maximum strength of 57.75 N/mm2 was obtained with 3.6% SF at 0.32w/c. High R^2 value of 0.961 indicated a strong association between the pairs of variables and the model explained the variations in the predictor variables satisfactorily. These readily available models are very much useful to the practicing engineers and researchers with simple input data. It was concluded that the concrete and the model developed in this study have significant potential for use on real time projects.

Keywords — compressive strength, pH, Silica fume, w/cm ratio

I. INTRODUCTION

Reinforced concrete has come to stay as the most accepted construction material in world wide. It is a composite consisting of steel and concrete, which, in itself, is another heterogeneous material consisting of cement and aggregates with varied shapes, sizes, configurations and orientations. During service, the reinforcement almost invariably undergoes rusting and hence deterioration has been observed in concrete structures well within their service life especially in some aggressive environments, leading to premature failure (Hassan, 2000). The economic loss due to premature failure and the cost of rebuilding runs up to several percentage of national income. In this context it is of paramount importance to produce durable concrete structures with longer life and less damage due to unforeseen factors. One of the main causes for damages is due to corrosion of reinforcing steel and therefore of late, there has been major interest in developing technology for corrosion control by developing a durable concrete with mineral admixtures. It is understandable from the reported literature that addition of mineral admixtures like fly ash (FA), silica fume (SF), metakaolin (MK) etc in concrete improves strength and durability characteristics of concrete. The strength of concrete depends on several factors like chemical composition of cement, water-to- cement ratio, types and amounts of mineral admixtures etc. Therefore, in order to improve the strength, the mix proportions of concrete should be carefully selected considering the above parameters. Many studies have been carried out on the use of admixtures, however search for efficient alternative admixture is still continuing. Thus in the present work, studies were carried out on the compressive strength of concrete, thereby to develop a model by adding silica fume as a partial re- placement of cement. Poon *et al.* (2006) and Mazloom *et al* (2004) related the mechanical and durability properties of high performance metakaolin and silica fume concretes to their microstructure characteristics. The particle size of SF was studied by selvaraj *et al.* (2003) and found that the specific surface area of SF is very high about 2000 m^2/kg whereas for ordinary Portland cement it's about 300 m^2/kg. Due to the larger surface area of SF it reacts rapidly with calcium

 DOI : 10.35291/2454-9150.2021.0531

ARTIFICIAL VISION AID FOR BLIND PEOPLE USING OPTICAL CHARACTER RECOGNITION

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Abstract—Speech and text is the main medium for human communication. A person needs vision to access the information in a text. However those who have poor vision can gather information from voice. This project has been built around Arduino Uno board. It is controlling the peripherals like Camera and Bluetooth headset which act as an interface between the system and the user. Optical Character Recognitions (OCR) are implemented in this project to recognize characters which are then read out by the system through a Bluetooth. The camera is mounted on spectacles; it captures a full view of the paper into the system. it is ensured that there are good lighting conditions. The content on the paper should be written in English and be of good font size. When all these conditions are met the system takes the photo, processes it and if it recognizes the content written on the paper it will announce on the Bluetooth headset speaker that the content on the paper has been successfully processed. After this it speaks out the content that was converted in to text format in the system from processing the image of the paper. In this way Arduino Based Reader for Blind helps a blind person to read a paper without the help of any human reader or without the help of tactile writing system. It also achieves the obstacle avoidance by using the ultrasonic sensor and it is informed to the user by vibration sensing technique. This Project presents a women safety detection system using GPS and IoT module.

Index Terms— **Assistive Technologies, Raspberry Pi, Face Recognition, Image Captioning, Text Recognition, OCR, News Scraping**

I. INTRODUCTION

There are approximately 285 million blind and visually problem people around the world. The term visual impairment covers a wide range and variety of vision, from lack of usable sight and blind, to low vision. Visually impairment cannot be corrected with eyeglasses or contact lenses to moderate visual impairment and an ability to read books, newspapers or any written notes. Globally the major causes of visual impairment are Uncorrected refractive errors (myopia, hyperopia, astigmatism), 43% Unoperated cataract, 33% the first cause of blindness is cataract 51%.

Visually impairment individuals usually only can read using the Braille system. The Braille system contains 63 codes of character. Each of them made of 1 to 6 raised dots in different position matrix or cells. The Braille system was invented by Louis Braille in 1824. Braille can be difficult to learn, not all people's fingertips are sensitive enough to use it. The blind people face three aspects of difficulties in their daily life. Environmental aspect, social aspect and technology aspect. For the environmental aspect, blind people often have difficulties in self-navigating outside well-known environments. Blind people also may face great difficulty when travelling or walking in a crowded place. Because of this, they need to bring along well-sighted friends or family to help them. The obstacles such as table and chair must be placed in one location to prevent any undesirable events. In terms of the social aspect, blindness affects the person's ability to complete the job duties. Because of this, job opportunities for blind people are limited. This will affect their

IMPLEMENTATION OF AN EFFICIENT MULTIPLIER USING DADDA ALGORITHM

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Abstract—The performance of the system such as Digital Signal Processor and Image Processor is determined by the multiplier. Because multiplier is the slowest element. Multiplier is the heart of the MAC unit. MAC is the Multiplier and Accumulator unit. MAC is Kernel operation in DSP. MAC has two components which are multiplier and accumulator. Multiplier produces the partial products. Output of multiplier that is the partial products are given to the accumulator. Accumulator performs the addition operation. These multiplication and addition operation can be performed in one round .Hence it is called as MAC Unit. The performance of the DSP is based on the MAC Unit. But the performance of the MAC is based on the speed up of the multiplier. The reason for designing an efficient multiplier. The two well known multipliers are the column compression multipliers presented by WALLACE and DADDA. Both of these multipliers following the same procedure .These multipliers has three steps 1)partial product generation 2)reduce and grouping the partial products 3)Carry Propagating Adder. But the difference is number of full adder and CPA length is based on the stages in WALLACE TREE. But DADDA multiplier does not depend on the stages. Hence DADDA multiplier is an efficient compared with the WALLACE TREE multiplier. DADDA multiplier is the refinement of the WALLACE TREE multiplier. Since the DADDA multiplier has the fast performance, we implement the proposed technique in the same and the improved performance is compared with the regular DADDA multiplier. In FAST DADDA multiplier the output of the partial products are computed independently in parallel and those values are added using the high speed hybrid final adder to get the final products.

Index Terms— **Column compression, Dadda multiplier, Faster, Hybrid final adder**

I. NTRODUCTION

Multipliers are the heart of MAC UNIT. MAC is Multiplier and Accumulator unit .MAC unit performs both multiply and addition functions. It operates in two stages. Firstly it computes the product of given numbers and forward the result for the second stage operation i.e. addition/accumulate. If both the computing is executed in a single rounding then it is said to be Multiplier and Accumulator (MAC).

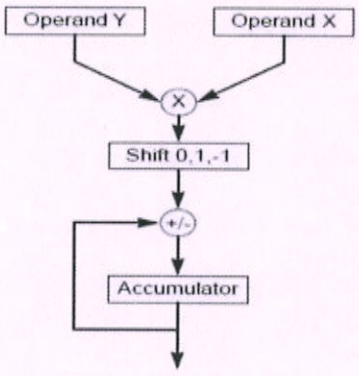

Fig.1 Block diagram of Multiplier and Accumulator Unit (MAC)

Architecture of Multiplier and Accumulator Unit (MAC)

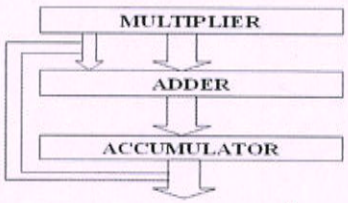

Fig.2 Architecture of Multiplier and Accumulator Unit (MAC)

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International Journal of Electronic Devices and Networking

E-ISSN: 2708-4485
P-ISSN: 2708-4477
IJEDN 2021; 2(1): 45-50

www.electronicnetjournal.com
Received: 27-11-2020
Accepted: 29-12-2020

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Phase measurement technique for Synchronous devices in FPGA using XOR gates

Muthulakshmi KA, Kavya C and Vinthiya R

Abstract
Every Electronic system use PLL (Phase Locked Loop) that requires a clock signal and applications like clock and data recovery circuits for serial input output and RF transceivers, Analog to Digital Converter Spectrum analyzer, image processing, smart grid and radar. In our project we use Bang Bang phase detector i.e.) binary phase detector which has potential of use in high speed which can be implemented with a simple D flip flop and XOR gate. We also discussed the procedure of the phase measurement system, the calibration sequence involved, followed by the performance of the design in terms of timing issues i.e. skew and jitter using XOR gates to make this phase detector suitable for FPGA where there is a need to preserve the synchronous relationship between the clocks.

Keywords: PLL, phase detector, XOR, jitter

Introduction
Experiments use phase information to calibrate and synchronize signals between different circuit elements. In certain experiments such as in high energy physics (HEP), preservation of phase relationship between critical signals throughout the experiment runtime is a necessary condition. Nowadays the implementation of digital architecture and hardware techno like FPGA (Field Programmable Gate Arrays) play an important role. Gigabit transceiver and timing trigger are implemented in FPGA, which was used by HEP experiments. For the entire experiment we need latency critical protocol to maintain constant phase differences in the recovered signal. In each round of power cycle, loss of lock in the transceiver, reset cycle, aging of clock circuitry in PLL the high speed serial transceivers of FPGA don't maintain constant phase shift. Inside the FPGA circuitry phase shift of 20-100ps is needed in logic design for phase monitoring. This purpose is to extract the relative phase measurement and also for recalibrating the system when we needed, for the maintenance of the constant phase relationship. Literature discussed the several approaches for phase measurement Over sampling technique is an inadequate to measure a relative phase difference between the two high-frequency clocks inside an Field Programmable Gate Array (FPGA) fabric, whose frequency exceeding the maximum limit supported by the fabric (<500 MHZ). The solution for this work is to sample it externally using an analog-to-digital converter (ADC) and then feed it back to the FPGA or computation. This technique requires an additional hardware to measure the phase difference of the internal digital clocks. phase measurement approach had been achieved by using the Dynamic Phase Alignment (DPA) features of the FPGA PLLs. The drawback of this method is the achieved resolution, which is limited to the $1/8^{th}$ of the voltage-controlled oscillator (VCO) frequency. In this work, we propose a new method for an accurate phase measurement in a Field Programmable Gate Array (FPGA) by using subsamples that are collected by the systematic sampling over XOR-based phase detector (PD) single throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

Classical PLL
PLLs include carrier recovery, clock recovery, tracking filters, frequency, phase modulation, phase demodulation, frequency synthesis and clock synchronization which are an incomplete list of specific task.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 722-729
Received 25 April 2021; Accepted 08 May 2021.

Implementation of Arithmetic Logic Subsystem in a Sliced Processor

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ABSTRACT

The designed estimated CLA (carry look-ahead adder) is swift and power (RAP-CLA). This adder will move between preliminary and precise modes of operation, making it appropriate for both error-tolerant and exact implementations. The framework, which is more space and power effective than current transportable estimated ripple carry adder, is accomplished by certain modifications. The findings show that, in the estimated mode of operation, the conceptual 32-bit adder achieves greater delay and energy reduction than the identical CLA, while maintaining a low error rate. It also has a smaller value and energy consumption than the other estimated adders investigated in this paper. Eventually, the suggested adder's usefulness is shown in two computer vision applications: smoothing and polishing. The CLA is then incorporated into the ALU, and the entire module is then used to create a module. Finally, these components are incorporated into a sliced processor to minimize area, energy, and delay.

Keywords: Ripple Carry Adder, Carry Look Ahead Adder, Delay, carry and Power

Introduction

Glorious results, i.e. reliable computing results, may not be needed in practical uses such as communication systems, electronic communication, artificial intelligence, computer animation, machine vision, big data, data mining, cloud services, biometric data, neural network computing, and so on. Alternatively, it might be acceptable to consider roughly accurate calculation outcomes that are contained within a given error bound. This is accomplished by using the limitations of human vision.

An online verifiable complete adder and an online verifiable n-bit ripple carry adder were proposed by Bose et al. To build a lightweight online verifiable complete adder and also a ripple carry adder that can be tested online [1]. The authors identify the CFTFA gate, a parity-preserving adder gate that optimizes the overall amount of gates, trash outputs, quantum cost, and essential inputs of the circuitry reversible online verifiable complete adder [2]. The CFTFA gate improves the number of gates by 25%, quantitative cost by 42.30%, and the amount of constant inputs by 50% over the current best. Due to the longest carry delay time, the Ripple carry adder conducts slower addition.

The asynchronous power sensitive of the carry save adder is created by Benet et al. VLSI power architecture restrictions have slowly increased over the last decade. Power consumption is a major consideration in VLSI architecture [3]. The dissipation is the source of the energy losses. It was once overlooked, but now it absorbs half of the overall power used by standard high VLSI chips. Certain power restrictions have been greatly alleviated by the complications that have been shrunk into the central submicron region, and the immobile certain adder now has the highest overall depravity [4-6].The main benefit of the carry save adder is that it has less replication

IOT BASED ROBUST METHOD FOR SMART INDUSTRY POLLUTION MONITORING AND CONTROLLING SYSYEM

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Abstract— Nearly 91%, of the world population is exposed to unhealthy levels of pollution. Pollution prevention or control is needed to preserve precious environmental resources and to improve the environmental quality. The proposed technique is to design an efficient system to read and monitor pollution parameters and if any of this factors exceeds the industry standards, immediately this information send to pollution control authority by using IOT methodology. Our proposed system monitor the amount of pH present in the industry's water, level of smoke released, machineries–temperature and noise in the industrial environment during industrial process. And also our system able to control water pollution (by closing the valve), air pollution (by indicating the level of pollution), machineries temperature (by using exhaust fan).Thus through our project we will try to monitor and control of pollution efficiency using IOT communication.

Index Terms—**Internet of Things, IoT, pH, Environmental Pollution**

I. NTRODUCTION

In the 21st century, there were lots of inventions, But at the same time were pollutions, global warming and so on are being formed ,because of this there is no safe drinking water for the world's pollution . Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population etc. The pollutions are growing very fastly even through industrialization increases the air pollution by releasing the unwanted gases in environment mostly in industrial areas. So, there must be a system to monitoring and controlling the industrial pollution. The terms monitoring and controlling are mostly confused as well as used similarly. The process of industrial quality control is the evaluation of industrial quality with respect to standard quality set by pollution controlling board. Especially the factors which may affects the human health and the health of the natural system itself. Remote monitoring, control and intelligent maintenance are the most vital criteria for maximizing production and process plant availability. Wireless sensor network is an emerging technology in current trends. The modern networks are bidirectional and enable control of sensor activity.

The wireless sensor network has wide applications such as health–care monitoring system, monitoring of air pollutants, and military surveillance. Sensor network are currently an active research area mainly due to the potential of their applications. Due to recent technological advances, the construction material for small and low cost sensors became technically and economically feasible even though, industrialization increase the degree of automation at the same time if increase the pollution by releasing the unwanted parameters in environment especially in industrial pollution areas. So there should be a system to monitor and assess the industrial pollution. Particular attention is given to factors which may affect human health and the health of the natural system itself. Industrial monitoring is the collection of

International Journal for Modern Trends in Science and Technology, 7(05): 39-43, 2021

ISSN: 2455-3778 online
DOI:https://doi.org/10.46501/IJMTST0705005
Available online at:http://www.ijmtst.com/vol7issue05.html

Numerical Simulation on Reinforced Concrete Beam with Different Cover Size under Two Point Bending Load

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To Cite this Article
R Padma Rani & R Harshani. Numerical Simulation on Reinforced Concrete Beam with Different Cover Size under Two Point Bending Load. *International Journal for Modern Trends in Science and Technology* 7, 39-43 (2021).

Article Info
Received on 15-April-2021, Revised on 27-April-2021, Accepted on 01-May-2021, Published on 05-May-2021.

ABSTRACT

Structural analysis is used to assess the behavior of engineering structures under the application of loads. Usually, structural analysis methods include analytical,experimental and numerical methods is used in thisproject, however, only Analytical method is used and the values are taken from literature reference, to get familiar with Finite Element Analysis (FEA) using ANSYS, this is done to acquire practical knowledge about of the effect of the cover. The aim is to identify different failure modes under a range of loading conditions by changing the cover size to get the data of various parameters such as deflection, stress etc. Study of cover helps to observe the stability, reliability and the overall strength of the structural beam. This project attempts made to study the effect of cover on the behavior of reinforced concrete beam. Forthis analytical study, the Reinforced concrete beam specimen of 2000x100x200mm was considered.ANSYS software is a suite of engineering simulation software, based on finite element method, which can solve problems ranging from linear analysis to nonlinear analysis. The Doubly reinforced beams weremodeled by using geometry. In this model,various covers are provided. The beam specimensused in this study were tested under two-point static loading condition until failure of the specimen. From theobtained resultconcluded that the total deformation and directional deformation values are low in 25mm cover compared to other cases but the equivalent stress value is low in 35mm cover size compared to 25mm cover size.

KEYWORDS: *Finite Element Analysis, ANSYS, Concrete Block, Reinforced Concrete Beam*

I. INTRODUCTION

Concrete is one of the important construction materials in the world. Reinforced concrete beam has specific concrete block sizes. By changing the dimension of the concrete block, their properties like strength, stress, deformation, etc vary.For this study, optimum block size has been taken the effect of cover depth on the behavior of RC beams was studied using ANSYS Workbench®. The results obtained from finite element models are in good agreement with the test data. Cover protect against corrosion and weathering effect. Finding the effect of cover depth on behavior of RC beam requires maintaining long lasting life of the reinforced concrete beam. Cover in the reinforcement bars corrode due to bad weathering effect. A cover block is usually a space that is used to lift the rebar in the surface so that the concrete may flow below the reinforcement. While doing

IJARCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Vol. 10, Issue 4, April 2021

DOI 10.17148/IJARCCE.2021.10415

SECURE ELECTRONIC HEALTH RECORD SHARING WITH SENSITIVE BASE ACCESS CONTROL

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Abstract: Cloud computing provides high performance, accessibility and low cost for data storing and sharing, provides a better consumption of resources. In cloud computing, cloud services providers compromise an abstraction of infinite storage space for clients to mass data. Electronic health record possesses the patient's medical details and their health history. The data owner has the capability to encrypt files and limiting access to only authorized data user.Data owner could add the users and distribute key for the verification of user.Key will be generated using Random Key Generation procedure. AES is implemented to provide security parameters to encrypt the data before store on cloud. We provide Role based authentication for medical data access.

Keywords: Medical Record Sharing, Advance Encryption Standard, Role Based Access Control, Attributes Based Access Control.

I. INTRODUCTION

Cloud computing is a computing paradigm, where a large pool of systems are connected in private or public networks, to provide dynamically scalable infrastructure for application, data and file storage. With the advent of this technology, the cost of computation, application hosting, content storage and delivery is reduced significantly. It is a practical approach to experience direct cost benefits and it has the potential to transform a data center from a capital-intensive set up to a variable priced environment. The idea of cloud computing is based on a very fundamental principles of reusability of IT capabilities. The difference that cloud computing brings compared to traditional concepts of "grid computing", "distributed computing", "utility computing", or "autonomic computing" is to broaden horizons across organizational boundaries. Forrester defines cloud computing as: "A pool of abstracted, highly scalable, and managed compute infrastructure capable of hosting end customer applications and billed by consumption". It is a technology that uses the internet and central remote servers to maintain data and applications and allows consumers and businesses to use applications without installation and access their personal files at any computer with internet access. This technology allows for much more efficient computing by centralizing data storage, processing and bandwidth. Cloud computing examples are Yahoo email, Gmail, or Hotmail.

A. SERVICE MODELS OF CLOUD

Cloud Providers offer services that can be grouped into three categories.

- Software as a Service (SaaS)
- Platform as a Service (Paas)
- Infrastructure as a Service (Iaas)

a. Software as a Service

In this model, a complete application is offered to the customer, as a service on demand. A single instance of the service runs on the cloud & multiple end users are serviced. On the customers" side, there is no need for upfront investment in servers or software licenses, while for the provider, the costs are lowered, since only a single application needs to be hosted & maintained. Today SaaS is offered by companies such as Google, Salesforce, Microsoft, Zoho, etc.

b. Platform as a Service

Here, a layer of software, or development environment is encapsulated & offered as a service, upon which other higher levels of service can be built. The customer has the freedom to build his own applications, which run on the providers infrastructure. To meet manageability and scalability requirements of the applications, PaaS providers offer a

IOT ENABLED SMART VOTING SYSTEM USING FACE BIOMETRIC FEATURES

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Abstract— In this system a Face Detection and Recognition system (FDR) used as an Authentication technique in systematic voting, which one of electronic is voting types, is proposed. Web based voting allows the voter to vote from any place in state or out of state. The voter's image is captured and passed to a face detection algorithm (Eigenface or Gabor filter) which is used to detect his face from the image and save it as the first matching point. The voter's National identification card number is used to retrieve and return his saved photo from the database of the Supreme Council elections (SCE) which is passed to the same detection algorithm (Eigen face or Gabor filter) to detect face from it and save it as second matching point. The two matching points are used by a matching algorithm to check whether they are identical or not. If the results of the matching algorithm are two point match then checks whether this person has the right to vote or not. If he has right to vote then a voting form is presented to him. If the registered Face and Voter-ID are recognized by the system, next stage of verification is held on. Two-Step Verification Process provides ultimate security features to this proposed approach after verifying the Face identity of the user.

Index Terms— **Voting System, Authentication, Face Detection, Recognition, Biometric Scanning**

I. INTRODUCTION

Face Biometric based system is a voting system in which the election data is recorded, stored and processed primarily as digital information and it needs to address, obtain, mark, deliver, and count ballots via computer. Therefore voter identification and authentication techniques are essential for more secure platform mechanisms to overcome vulnerabilities of the client used by the voter to cast her vote. Security can be achieved using some of techniques of electronic voting such as Guidelines, only need to develop a list of instructions and then send it via email or put it on the election web page; Bootable CD, approach to overcome the secure platform problem was proposed by Otten (2005). She recommended developing a special voting operating system based on Knoppix. It is an operating system based on Debian that is designed to be booted and run directly from a CD or DVD; Smart Cards as Observers, in which an observer is a manipulation resistant piece of hardware which is owned by the voter. The idea is that the observer is not allowed to directly communicate with the Internet. All the communication needs to be forwarded by the voter; Code Sheets, the idea of code sheets is that the voter gets a piece of paper together with the general election information via post where each candidate or each party is linked to a particular code.

Now, in order to cast a voter the voter does not click on the candidate or party of her choice but enters the corresponding

BUS PASS REGISTRATION AND RENEWAL SYSTEM

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Abstract—This online bus pass registration application will help students save their time and renewal bus passes without standing in a line for hours near counters. Initially students need to register with the application by submitting details of photo address proof, and required details and submit through online. They will verify your details and if they are satisfied they will approve bus pass. This project aims to provide an effective solution for maintaining Bus pass information using a database. The system has two logins, one for user and other for admin. Online bus pass Generation system is a web application for people to get Bus passes through online. This system was intended to develop an application to perform functionalities like accessing the basic information for authentication and provide Bus pass to a particular person without placing him/her in a queue for a long time. Online bus pass generation system is helpful as it reduces the paper work, time consumption and makes the process of getting bus pass in simple and faster way. User can refill their account and extend the validity every time when the pass expires. Admin can view all users' details and balance through its login. This system is helpful to people to get bus pass from anywhere and no need to worry about renewal of the Bus pass.

Index Terms—**RFID, GPS, Real-Time Tracking, Transportation, Android Application**

I. INTRODUCTION

A country's progress is determined by one of the most important factors like its transport infrastructure. Bangladesh stands as the 8th most populous country in the world with an estimated population of 163.05 million whereas Dhaka is occupied with a population of 14.4 million. The public transportation system remains as one of the most primary income sources for a developing country like Bangladesh. On the other hand, the public transportation service has become so agonized in terms of quality, complacent, and reliability in Dhaka city. Dhaka has become one of the cities in the world without having a properly planned, designed, managed, and well-constructed mass public transit system. Now-a-days technology has become so efficient that it has provided access to gather information from the surroundings and thus helped to provide essential and useful facilities to the users. To ensure the goal of a smart transportation system, the public transport system must provide real-time services. Due to the lack of proper information about the exact arrival and departure time of a public transport, travelers always face the miserable condition of waiting for the bus for a long time. Though the passengers have to wait for a long time to get into the bus, still they have no assurance whether they will occupy themselves with a seat or not. As a densely populated city like Dhaka, during the busy hours, it may become the most difficult situation to travel by a mode of public transport.

A. Mobile Computing

Mobile Computing is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. The main concept involves:

- Mobile communication

FACE BIOMETRICS BY OWN PASSWORD IN ONLINE SOCIAL NETWORKS

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Abstract—Authentication based on passwords is used mostly in applications for computer security and privacy. However, human actions such as choosing bad passwords and inputting passwords in an insecure way are regarded as the weakest link in the authentication chain. Text based passwords are the most widely used authentication method for decades. As Text based passwords consist of numbers and upper- and lower-case letters, these are considered strong enough to resist against brute force attacks. Even worse, it is common case that users may use only one username and password for multiple accounts. Various graphical password authentication schemes were developed to solve the problems and weaknesses associated with text based passwords. But image based passwords can be hacked by observation attacks. So in this project propose a novel authentication system named as PASSBYOP based on own picture as graphical passwords to resist shoulder surfing and observation attacks. This face image is getting divided into row-column grid, and from these grid users have to select one block as his/her password. Next time while login, user have to take the photo of same faces and have to select the same block he/she selected while registration process then feature extraction is performed on that block, and if the features are matched with the registered image then only the user is get authenticated. Otherwise send the mobile intimation for unauthorized access.

Index Terms—**Privacy, semi-adversarial, neural networks, auto-encoder, face image, perturbation, soft biometrics, deep learning**

I. INTRODUCTION

The use of automated methods to compare face images in order to determine the identity of an individual or to verify a claimed identity is known as face recognition. Face recognition has been widely used in several applications, including, access control in smartphones, surveillance for public safety, and finding missing children. Examples of face recognition methods include Elastic Bunch Graph Matching, Active Appearance Models, Sparse Representation, as well as more recent techniques based on Deep Learning. The primary purpose of collecting and storing face images in a biometric system is for the recognition of individuals. Yet, face images stored in a database implicitly contain auxiliary information about each individual. These auxiliary information, sometimes referred to as soft biometric attributes, include gender, age, ethnicity, body mass index, and health characteristics. Soft biometrics can facilitate a large variety of applications, such as improving face recognition performance, clustering users, or developing targeted advertisements.

Recent advances in machine learning have made it possible to extract such soft biometric attributes from face images automatically and, in many cases, with a high degree of accuracy. However, users of such biometric systems may prefer not to be profiled based on their demographic attributes and may wish to opt-out of such services due to privacy concerns [24]–[26]. In this regard, certain privacy laws allow users to choose what information about themselves to reveal

IJARCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Vol. 10, Issue 5, May 2021

DOI 10.17148/IJARCCE.2021.10513

AN EFFICIENT ENCRYPTED MEDICAL DATA STORAGE USING TWO CLOUDS WITH DUPLICATE DATA GENERATION TECHNIQUES

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Abstract- In cloud secure personal data sharing is the important issues because it creates several securities and data confidentiality problem while accessing the cloud services. Many challenges present in personal data sharing such as data privacy protection, flexible data sharing, efficient authority delegation, computation efficiency optimization, are remaining toward achieving practical fine-grained access control in the Personal Information Sharing system. Personal records must be encrypted to protect privacy before outsourcing to the cloud. Aiming at solving the above challenges, here propose an efficient data sharing mechanism for Personal Data Sharing, which not only achieves data privacy, fine-grained access control and authority delegation simultaneously. Proposed system is used to secure patients' MHR (Medical Health Record) in the healthcare cloud using the duplicate generation technique with a two server based computing facility. Duplicate server serves as a second gallery to contain duplicate MHR that appear to the attacker as if it is the original MHR. When user uploading a file on original server, corresponding duplicate file will be stored on another server. In this method, the decoy files are called when an attacker is detected as accessing the system, in our proposed methodology the duplicate files are retrieved from the beginning to ensure better security. In proposed approach RSA algorithm is implement to encrypt the medical records.

Index Terms – Data sharing mechanism, attribute based encryption, secure outsourced computation, cloud computing, Electronic Medical Record.

I . INTRODUCTION

Cloud computing is definitely a promising model for business computing. It's describes important infrastructure to have an up-and coming type of service provision which includes the benefit of reducing expense by sharing computing and storage sources. Currently, Cloud Computing is really a huge technology that is exceeding all of the earlier technologies of computing of this competitive and demanding Information technology industry.

Cloud computing is consistently growing and there are many main cloud computing providers including Amazon, Google, Microsoft, Yahoo and many others who are offering solutions including Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Storage-as-a- Service and Infrastructure-as-a-Service (IaaS). In addition, considering the possibility to substantially minimizing expenses by optimization and also maximizing operating as well as economic effectiveness, cloud computing is an excellent technology. Furthermore, cloud computing can tremendously boost its cooperation, speed, and also range, thus empowering a totally worldwide computing model on the internet infrastructure. On top of that, the cloud computing has advantages in delivering additional scalable, fault tolerant services.

Cloud computing handles resource management in a better way since the user no longer needs to be responsible for identifying resources for storage. If a user wants to store more data they request it from the cloud provider and once they are finished they can either release the storage by simply stopping the use of it, or move the data to a long-term lower-cost storage resource. This further allows the user to effectively use more dynamic resources because they no

DEEP LEARNING TECHNIQUES FOR CROP PHOTOSYNTHETIC FROM LEAF IMAGE

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Abstract— Agricultural productivity is something on which economy highly depends. This is the one of the reasons that disease detection in plants plays an important role in agriculture field, as having disease in plants are quite natural. If proper care is not taken in this area then it causes serious effects on plants and due to which respective product quality, quantity or productivity is affected. Plant diseases are extremely significant, as that can adversely affect both quality and quantity of crops in agriculture production. Plant disease diagnosis is very essential in earlier stage in order to cure and control them. Generally, the naked eye method is used to identify the diseases. In this method experts are involved who have the ability to detect the changes in leaf color. This method involves lots of efforts, takes long time and also not practical for the large fields. Many times, different experts identify the same disease as the different disease. This method is expensive as it requires continuous monitoring of experts. Plant diseases can increase the cost of agricultural production and may extend to total economic disaster of a producer if not cured appropriately at early stages. The producers need to monitor their crops and detect the first symptoms in order to prevent the spread of a plant disease, with low cost and save the major part of the production. Hiring professional agriculturists may not be affordable especially in remote isolated geographic regions. Inspired by the deep learning breakthrough in image-based plant disease recognition, this work proposes deep learning models for image-based automatic diagnosis of plant disease severity It includes image segmentation which includes active contour method and image classification approach which includes neural network algorithm to various types of diseases.

Index Terms— **Convolutional Encoder Decoder Network, Crop Line Detection, Semantic Graphics, Vision based Control**

I. INTRODUCTION

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves. The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better decisions in the future based on the examples that we provide. The primary aim is to allow the computers learn automatically without human intervention or assistance and adjust actions accordingly. Machine learning enables analysis of massive quantities of data. While it generally delivers faster, more accurate results in order to identify profitable opportunities or dangerous risks, it may also require additional time and resources to train it properly. Combining machine learning with AI and cognitive technologies can make it even more effective in processing large volumes of information.

A. Image Processing

In imaging science, image processing is processing of images using mathematical operations by using any form of

GENE BASED DISEASE PREDICTION USING SEMI-SUPERVISED LEARNING

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Abstract—The DNA microarray technology has revolutionized biology research, allowing scientists to simultaneously measure the expression levels of thousands of genes in a single experiment. Gene expression profiles, which represent the molecular state of a cell, has a lot of promise as a medical diagnostic tool. The keys to addressing the fundamental harms relating to diagnosis and discovery are known to be disease classification with gene expression data. With the recent introduction of the DNA microarray technique, it is now possible to monitor a large number of gene expressions simultaneously. Experts have begun to explore the possibilities of disease classification using gene expression data, thanks to the large amount of data available. In recent years, a large number of methods have been proposed, with promising results. However, there are still a number of issues that must be addressed and comprehended. It is necessary to take a closer look at the problem, the proposed solutions, and the associated issues all together in order to gain insight into the disease classification difficulty. We present a comprehensive searching, clustering, and classification method such as Pattern similarity search, Spatial Expectation Maximization, and K nearest neighbor classification in this project, and evaluate them based on their evaluation time, classification accuracy, and ability to reveal biologically meaningful gene information. Based on our multiclass classification method, we can diagnose diseases like cancer (lung, blood, breast, and skin) and other diseases, as well as determine disease severity levels and prescribe medication for the affected diseases. The results of our experiments show that classification algorithm efficiency can be enhanced by using graphs.

Index Terms— **Gene Selection, Cancer Microarray Data, Cuckoo Search, Multi-Objective, Evolutionary Operators, Semi-Supervised Learning**

I. INTRODUCTION

Microarray technology has become one of the indispensable tools that many biologists use to monitor genome wide expression levels of genes in a given organism. A microarray is typically a glass slide on to which DNA molecules are fixed in an orderly manner at specific locations called spots (or features). A microarray may contain thousands of spots and each spot may contain a few million copies of identical DNA molecules that uniquely correspond to a gene. The DNA in a spot may either be genomic DNA or short stretch of oligo-nucleotide strands that correspond to a gene. The spots are printed on to the glass slide by a robot or are synthesized by the process of photolithography. Microarrays may be used to measure gene expression in many ways, but one of the most popular applications is to compare expression of a set of genes from a cell maintained in a particular condition (condition A) to the same set of genes from a reference cell maintained under normal conditions (condition B). Clustering techniques have proven to be helpful to understand gene function, gene regulation, cellular processes, and subtypes of cells.

IJARCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Vol. 10, Issue 4, April 2021

DOI 10.17148/IJARCCE.2021.10440

ANDROID BASED EFFICIENT ROAD SAFETY MEASURES AND DRIVER BEHAVIOUR MONITORING SYSTEM

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ABSTRACT - The main objective of this application is to enhance the user safety, by analyzing the road conditions and user behavior by using sensors associated with android mobile. This system enhances the user safety measures by identifying the user behavior such as follows: (i) the user wearing helmet or not (ii) Monitor the driving condition by using accelerometer connected in mobile phone and (iii) Locating the user position by means of mobile GPS. This system allows further precedence only if the user is wearing helmet or else it produces the alert message like the user is not wearing helmet to administrator. In the proposed approach, once the user entered successfully into the application, it shows the user's vehicle position and in which direction the user is proceeding on. As well as, this application is used to track the location of the user (vehicle) by using mobile Global Positioning System (GPS). For all the entire system is used to improve the safety measures of user and feels them more secure in roads while driving.

Index Terms – Proximity Sensor, Accelerometer, GPS, Android, Decision-Tree Algorithm, C-Series Machine Learning Algorithm.

I. INTRODUCTION

Intelligent transportation systems (ITS) introduce advanced applications aimed at providing innovative services, offering traffic management and enabling users to be better informed, including support for safety, mobility, and environmental applications. In parallel to ITS, mobile devices have experienced technological breakthroughs in recent years, evolving towards high performance terminals with multi-core microprocessors. The smartphone is a clear representative outcome of this trend. In addition, the on-board diagnostics (OBD-II) standard, available since 1994, has recently become an enabling technology for in-vehicle applications due to the availability of Bluetooth OBD-II connectors. These connectors enable a transparent connectivity between the mobile device and the vehicle's electronic control unit (ECU). When combining high performance smartphones with OBDII connectivity, new and exciting research challenges emerge, promoting the symbiosis between vehicles and mobile devices, and thereby achieving novel intelligent systems. Driving Styles implements a solution based on neural networks, which is capable of characterizing the driving style of each user, as well as the fuel consumption. In order to achieve this functionality, the data is obtained from the ECU via the OBD-II Bluetooth interface, including the speed, acceleration, revolutions per minute of the engine, mass flow sensor (MAF), manifold absolute pressure (MAP), and intake air temperature (AIT). Currently, this information can be collected and used in applications aimed at improving road safety and promoting eco-driving, thus reducing fuel consumption and greenhouse gas emissions.

A. RELATED RESEARCH SUMMARY

Technological advancements in the field of mobile telephony are making smartphones very powerful. This high computing power opens new and attractive opportunities for research. When coupled with the eco-driving concept, it has gained great significance in recent years. An example is the prototype of an onboard unit developed by Hernandez et al. These driving techniques save fuel consumption, regardless of the technology used inside the vehicle.

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Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

journal homepage: www.elsevier.com/locate/matpr

Time based costing of energy storage system with optimal scheduling and dispatch under demand

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ARTICLE INFO

Article history:
Received 2 August 2020
Received in revised form 19 August 2020
Accepted 25 August 2020
Available online xxxx

Keywords:
ESS
SOC
RES
PEV
BESS

ABSTRACT

A System for Energy Storage serves as a interconnection between a generator and load. Renewable energy resources produce energy on a regular basis during off-height time periods or when energy demand is less. ESS allow much better integration of non-conventional energy assets into an electric grid by the electricity produced and smooth out spikes in demand. Therefore it is shockingly important to have the most suitable operating techniques for battery garage structures to lower the operating value or increase an energy consumer's earnings. A first-rate operating system is proposed that can optimize the value of using more than one garage batteries. The two operating system classes are the most real-time dispatch and common scheduling. The best scheduling of load uses a predictive method of manipulating versions so as not to forget uncertainty in estimating the SOC of each battery machine [6–8]. The scheduler generates a chain of battery connection sets and states over the control horizon that minimizes strength rate while maintaining pleasurable operating constraints for stable battery usage and peak optimization. The two types of operating systems are the most common scheduling and real-time dispatch. The best scheduling uses a statistical approach of adjusting versions so as not to neglect complexity in calculating each battery machine's base. The scheduler produces a series of battery agenda sets and states over the control horizon that minimizes intensity levels while preserving pleasurable operational constraints for efficient usage of the battery and peak arrangements.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research – 2019.

1. Introduction

Modern electricity grids were built to provide energy generated by some useful turbines linked to the high-voltage (hv) side of the network. Recently, this state of affairs is changing due to the extremely good boom of medium to small non-conventional resources, including hydro, solar and wind, disbursed on medium and low voltage (MV and LV) grids, the contribution of RES to the electricity production market in 2019 amounted to approximately 26% of the world's total energy consumption, a fuel consumption [8]. For example, in the ECU union, a total of about fifty-eight gw of the latest energy capacity was converted into built in 2020, and the renewable proportion of the latest power plants was 40%. The large spread of RES is driven by the vast social needs that can be obtained from these sources: reduction in greenhouse gases and reduction in air pollution, diversification of energy supply, reduced reliance on other fuels imported, economic growth and manufacturing employment, establishment and management of RES. Given these obvious advantages for the environment, companies and consumers themselves, there are several drawbacks that may hinder the penetration of renewable sources.***Fig. 1.Fig. 2.

Renewable generation is, in general, complex, unpredictable and is capable of simply partial dispatch. Because of this, it is much more difficult to distribute energy like in the previous years, and modern technologies are required to maintain real-time equilibrium between supply and demand. In addition to emerging of RES, conventional energy grids also face numerous challenges that restrict their efficiency between which are the most inappropriate grid resource dimensioning and usage [2]. In fact, which will have to be able to meet the peak of call for in the form of the demand for electrical energy by consumers, set up period, transmission and distribution capacities. In addition, the volatility of generation

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https://doi.org/10.1016/j.matpr.2020.08.620
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research – 2019.

Please cite this article as: T. Vishnu Kumar, M. Mathankumar, A. Manjunathan et al., Time based costing of energy storage system with optimal scheduling and dispatch under demand, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.08.620

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 3, 2021, Pages. 7341 - 7347
Received 16 February 2021; Accepted 08 March 2021.

Integration of 3D MEMS Accelerometer Sensor

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Abstract— A methodology which tracks the hand gesture depends on the integration of custom-built Micro Electro Mechanical Systems (MEMS)-based inertial sensor (measurement unit), the low-resolution imaging (i.e., vision) sensor. A 2-D gesture recognition changes in to a motion tracking gesture recognition in three dimensions. Essentially, it will show the inertial data sampled at 100 Hz and vision data sampled at 5frames/s. An Extended Kalman filter, which provides accurate human hand gesture recognition as well as tracking. The novel adaptive algorithm measures noise covariance, acceleration and angular rotational rates. The proposed method may reduce the velocity of error and also position drift by using MEMS Accelerometer sensor. To compensate for the time delay, the moving average filter used to reduce the frequency noise and then propagate the inertia of signal. A dynamic of time wrapping with DCT provides extracted feature and it gives exact value of 92.3% also individual numerical recognition with 100 ms.

Index Terms—fusion sensor, gesture and recognition, MEMS related motion tracking, trajectory algorithm

1. Introduction

The up-gradation of micro electromechanical system (MEMS) technology, leads to various applications with low cost of MEMS-global positioning system (GPS) which is integrated with the navigation system is being popularly researched. The MEMS-based inertial sensor which is integrated with GPS and it also provides a reliable positioning solution in GPS which was commonly occurs in the urban areas [2]. Especially, a low cost of the MEMS-GPS integrated navigated system is used for mobile robot, an unmanned aerial vehicle, a micro-aerial vehicle and also a pedestrian navigated system. Gestures are used for the communication system between the people and also a machine. Then Building the interaction between the human and computers are also required for an accurate hand gesture recognized system also an interface for an easy human computer interaction (HCI) system, a recognized gesture is used for the controlling robot also conveying meaningful information.

The expansion of human machine interaction technologies reduces the size, dimension and weight of the consumer electronic products such as smart phones, handheld computers. It increases the day-to-day convenience. An attractive and alternative, inertial sensor projected body will sense the activities of the human movement, it also captures the motion of trajectory information from the accelerations of recognizing gestures. The main advantage of the inertial sensors for motion sensing that can be operated without any of the external reference and also the limitation in operating the conditions. However, the recognition of motion trajectory is very difficult for the users and also, they have a different speeds or styles to generate a various motion of trajectories. [5] The researchers looking forward to get rid of the issues in increasing the accuracy of the recognition system. By the process of miniaturization, the MEMS accelerometer based recognized system which will acknowledge the gestures in a 3-D is constructed by using this digital format.

Gestures may be static (posture) or dynamic (sequence of more postures). The Static gestures are required less computational, complexity and dynamic gestures which are all complex. It is suitable for the real time environments.

A Graphical User Interface Based Heart Rate Monitoring Process and Detection of PQRST Peaks from ECG Signal

M. Ramkumar, C. Ganesh Babu, A. Manjunathan, S. Udhayanan, M. Mathankumar, and R. Sarath Kumar

Abstract An electrocardiogram (EKG/ECG) is represented as the recording of electrical impulses of the cardiac muscle and it is utilized in investigating and detecting the cardiac disease or arrhythmia. This activity of electrical impulses of the heart's cardiac muscle exhibits the translation into the tracings of line on a paper. This dips and spikes over the tracings of the line are determined to be as a wave series. This wave series is consisting of six waveforms of various characteristics which are discernible and its differentiation can be made as *P* peak, *Q* peak, *R* peak, *S* peak, *T* peak, and sometimes *U* peak. One of the most ancient methodologies in analyzing the ECG signal for making the detection of PQRST waveform is done based on digital signal processing technique such as fast Fourier transform (FFT), discrete wavelet transform (DWT), and artificial feed forward neural networks. However,

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S. Smys et al. (eds.), *Inventive Computation and Information Technologies*, Lecture Notes in Networks and Systems 173,
https://doi.org/10.1007/978-981-33-4305-4_36

Materials Today: Proceedings xxx (xxxx) xxx

Contents lists available at ScienceDirect

journal homepage: www.elsevier.com/locate/matpr

The impact of advanced technological developments on solar PV value chain

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ARTICLE INFO

Article history:
Received 19 August 2020
Received in revised form 21 September 2020
Accepted 25 September 2020
Available online xxxx

Keywords:
Solar PV cells
Solar PV modules
Cell efficiency
Energy conversion
Solar PV value chain
Materials

ABSTRACT

The electricity sector has largely started to employ solar photovoltaic (PV) systems as an alternative and clean source of energy. Here the goal is to offer ever more effective PV conversion solutions. These solutions lead towards the innovations throughout the solar PV value chain. The cell efficiency plays a vital role in manufacturing of PV modules and materials as it directly influences in the reduction of cell processing costs. This study addresses and examines the progress in innovations in themanufacturing of solar PV modules and materials, emerging application areas apart from the fields and rooftops, O&M services and finally the end-of-life material recycling of solar PV cells.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research – 2019.

1. Introduction

The production of electricity from the sustainable and clean energy resources increases the interest of many researchers around the world. Solar PV energy has become the second most commonly used renewable energy technology, and one of the world's largest deployed renewable energy resources too [1]. The main advantage of this type of energy is that the solar radiationcan be picked up directly by using small photovoltaic (PV) cells and it can be converted into electrical energy. Solar PV cells are manufactured using different types of semiconductors, such as silicon (Si), cuprous sulfide (Cu2S), cadmium sulfide (CdS), as well as gallium arsenide (GaAs) [2]. The beauty of these advanced technologies is that they can be manufactured by quiteless cost compared toother conventional silicon based materials. In the past decade in particular, the conversion efficiency has been significantly increased from one percent to more than 12 percent [3].

Generally the individual cells are packaged and come up in the form of modules that generate a certain amount of electrical parameters such as voltage and current when they are incident by sunlight [4].The various connection schemes of Solar PV modules are able to produce a large amount of power in terms of some kilowatts to megawatts. As far as PV modules are concerned, the energy market faces the challenge to innovate and adapt to improve conversion efficiency of photovoltaic cells. These challenges have unlocked the door for many new technologies to emerge on the market dominated by conventional silicon based technologies [5].

Solar PV modules and devices are robust and compact in design and also the maintenance requirement is low [6]. For those reasons, they are used in numerous applications. Although the energy harnessed by solar photovoltaic cells is numerous, there are a few limitations such as unavailability at all time, climatic conditions, intermittent nature ofoutput power etc. [7]. To alleviate these problems listed above, high efficient and cost effective solar PV cells andmodules must be developed. This paper discusses the advanced technologies which motivate the solar photovoltaicindustry and its further research and development activities as well as its prospective effect in the energy sector. It also examines the growing market challenges and its importance. Fig. 1 shows the Best Research-Cell Efficiency chart as on March 2020 [8].

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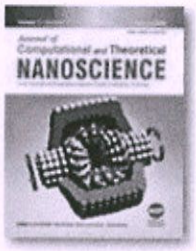
https://doi.org/10.1016/j.matpr.2020.09.588
2214-7853/
Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research – 2019.

Please cite this article as: M.D. Udayakumar, G. Anushree, J. Sathyaraj et al., The impact of advanced technological developments on solar PV value chain, Materials Today: Proceedings, https://doi.org/10.1016/j.matpr.2020.09.588



Cloud Resource Allocation and Optimization: A Review

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Source: Journal of Computational and Theoretical Nanoscience, Volume 15, Numbers 9-10, September 2018, pp. 2701-2706(6)
Publisher: American Scientific Publishers
DOI: https://doi.org/10.1166/jctn.2018.7563

Abstract | References | Citations | Supplementary Data | Suggestions

Cloud computing is a prominent technology that becomes popular in providing on demand resources to the end users on payment basis via internet. The major challenge of any cloud service provider is to allocate the suitable resource packages efficiently that meet the user's need. Because of fluctuation in user's requirements, it is very challenging task to allocate cost effective resources to the consumers or end users as per the need. Hence it is mandatory to have an efficient resource allocation techniques that fulfilled the user's requirements to achieve QoS (Quality of Service). This paper reviews various resource allocation and optimization techniques used in cloud environment.

Keywords: Cloud Computing; Optimization; Resource Allocation; Virtualization

Document Type: Research Article

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Publication date: September 1, 2018

Cluster Computing
https://doi.org/10.1007/s10586-018-2349-y

A smart sensor network localization for electric grids

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Received: 26 December 2017 / Revised: 15 February 2018 / Accepted: 1 March 2018

Abstract
Smart grid refers to a sophisticated infrastructure that improvises the efficacy, safety and trustworthiness of an electric power grid. This is done alongside seamless integration of renewable and alternative energy sources by making use of sophisticated communication and automated control technologies. In recent times this WSNs technology has been recognized to be a very a promising one and it also enhances the various aspects of that of the electric power systems. Using the WSN in the smart grid is because of its low cost, low power dissipation, good delivery, good generation and utilization and high flexibility, which make them a vital aspect in the electric power system of the next generation of the smart grid. For this work a communication paradigm that is heterogeneous and based on the needs of the smart gird network has been proposed for supporting the smart grid and their applications. The glow swarm optimization protocol has been proposed and implemented as a data aggregation mechanism that has no energy constraints at the base station. This proposed method has outperformed the actual number of packets that are received at the base station, the number of the priority packets that are received at the base station and the number of such clusters formed.

Keywords Wireless sensor networks (WSNs) · Smart grid · Glow swarm optimization (GSO) · Clustering

1 Introduction

The wireless sensor networks (WSNs) are defined as a network for monitoring the environmental and physical conditions like pollutants, motion, vibration, sound and temperature, using wireless technology and has the characteristic of being self-configured, for passing data via a certain area or a sink node through the network to a particular location in which the data is both observed and also analyzed. These sensor nodes are capable of communicating between themselves by making use of radio signals and for computing, along with power components and radio transceivers, a wireless sensor node will be provided with both sensing and computing devices. Data aggregation is the process of collecting data by the cluster heads from its nodes and sending it to the sink.

Once the sensor nodes have been fully deployed, with multi-hop communication, they have the onus of auto organizing the right type of network facilities with a multi-hop communication. After this the data will be collected by the onboard sensors.

There are many challenges that are placed by deploying the sensor networks that have a superset of the ones discovered in the ad hoc networks [1]. Wireless communication is used by these sensors without the requirement of any infrastructure. The energy supply is limited and non-renewable for the sensor nodes, and this poses a major challenge. For maximizing the network lifetime, these protocols must be designed initially keeping in mind the importance of energy resource management.

The nodes generally use a broadcast communication and a topology network that changes continuously to the nodes that are prone to failure. Owing to this the nodes need to be autonomous and they are normally disregarded [2]. This type of service will have limited power and memory and also have low capability of computation. An important issue that is to be studied in the WSN is the feature of

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Published online: 14 March 2018