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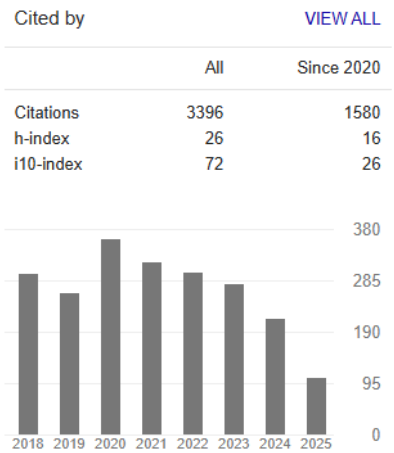

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DESIGN AND DEVELOPMENT OF AUTOMATIC WATER FLOW METER

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ABSTRACT

Effective irrigation water management begins with timing and regulating irrigation water application in a way that will satisfy the need of the crop without wasting water, soil and crop nutrients. This involves supplying water according to the crop requirement, quantity that can be held by the soil and is available to the crop at rates tolerated according to the soil characteristics. So measuring water in fields is very essential step in irrigation management systems. There are many water flow measurement techniques as well as different types of water flow meters used in irrigation to measure the volume of water flow in pipelines but these all are too costly. This paper describes design and development of low cost automatic water flow meter which supplies only required amount of water to the crops saving water as well as energy. G1/2 Hall Effect water flow sensor is used as a sensing unit with a turbine rotor inside it whose speed of rotation changes with the different rate of flow of water. The Hall Effect sensor outputs the corresponding pulse train for frequency input to the microcontroller. The whole system comprises of AT89S52 microcontroller, G1/2 Hall Effect water flow sensor, relay, optocoupler, a water pump, 5V supply, LCD, keypad and some passive components. The AT89S52 microcontroller is programmed in Keil development Tool.

KEYWORDS

Low cost sensor, Hall Effect sensor, rotation of rotor, flow rate of water, AT89S52 microcontroller, Keil software, Ultrasonic flow meter.

Full Text: https://airccse.org/journal/ijcsea/papers/3313ijcsea06.pdf

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DEALING CRISIS MANAGEMENT USING AI

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ABSTRACT

Artificial intelligence has been a buzz word that is impacting every industry in the world. With the rise of such advanced technology, there will be always a question regarding its impact on our social life, environment and economy thus impacting all efforts exerted towards sustainable development. In the information era, enormous amounts of data have become available on hand to decision makers. Big data refers to datasets that are not only big, but also high in variety and velocity, which makes them difficult to handle using traditional tools and techniques. Due to the rapid growth of such data, solutions need to be studied and provided in order to handle and extract value and knowledge from these datasets for different industries and business operations. Numerous use cases have shown that AI can ensure an effective supply of information to citizens, users and customers in times of crisis. This paper aims to analyse some of the different methods and scenario which can be applied to AI and big data, as well as the opportunities provided by the application in various business operations and crisis management domains.

KEYWORDS

Artificial Intelligence, Big Data, Business Operations, Crisis Management.

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USING VOICE RECOGNITION IN E-LEARNING SYSTEM TO REDUCE EDUCATIONAL INEQUALITY DURING COVID-19

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ABSTRACT

During the COVID -19 pandemic, educational institutions around the world faced problems that have to do with the frustration of students for whom traditional education has been replaced by the online format. Students are experiencing technical difficulties in the digitalization of education. International monitoring of education systems has shown that quite a few countries were ready to move to distance learning, both for technical and economic reasons. The covid pandemic has caused an increase in educational inequality. Elearning systems were expected to reduce inequality in education, but empirical research has shown that learning in this format not only does not reduce, but can increase inequality, increasing the gap in educational outcomes between students with different socioeconomic status. The article describes applications of using voice recognition technology based on artificial intelligence which, by our opinion, may reduce educational inequality during covid-19. We presented a comparative analysis of existing examples artificial intelligence in the educational process. Artificial intelligence uses in specialized software it makes educational process more convenient for both the students and the teachers. There is a description of an application “Academic phrase bank" developed by author. The application consists of two specialising actions for Google assistant. The application allows to increase academic vocabulary, train of creating grammatically correct academic expressions, and memorize templates of academic phrases. In active mode, this application helps to create correct phrases of academic English and improve the abilities of understanding English speech.

KEYWORDS

Academic English, COVID-19, personal assistant, academic publications, applications for learning English

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DATACENTRE TOTAL COST OF OWNERSHIP (TCO) MODELS: A SURVEY

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ABSTRACT

Datacenter total cost of ownerships (TCO) tools and spreadsheets can be used to estimate the capital and operational costs required for running datacenters. These tools are helpful for business owners to improve and evaluate the costs and the underlying efficiency of such facilities or evaluate the costs of alternatives, such as off-site computing. Well understanding of the cost drivers of TCO models can provide more opportunities to business owners to control costs .In addition, they also introduce an analytical structure in which anecdotal information can be cross-checked for consistency with other well-known parameters driving data center costs. This work focuses on comparing between number of proposed tools and spreadsheets which are publicly available to calculate datacenter total cost of ownership (TCO) ,The comparison is based on many aspects such as what are the parameters included and not included in such tools and whether the tools are documented or not. Such an approach presents a solid ground for designing more and better tools and spreadsheets in the future.

KEYWORDS

Datacenters, TCO model, TCO parameters, IT software license cost, network, server.

Full Text: https://aircconline.com/ijcsea/V8N4/8418ijcsea04.pdf

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EMBEDDED TECHNOLOGY FOR VEHICLE CABIN SAFETY MONITORING AND ALERTING SYSTEM

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ABSRACT

Motor vehicles are the prime source of transportation where vehicles with A/C play a major part. This paper designs an embedded system for a vehicle cabin, which senses the gases like carbon-monoxide and oxygen and displayed at each and every second. If the level of the CO increases than the normal level (30ppm) or the level of the oxygen decreases than the normal level (19%) then an alarm is generated automatically and also ventilation is provided immediately. A warning message is sent to the authorized user via GSM. The advantage of this system is proper detection and faster response time leading to faster diffusion of the situation, compared with the manual methods.

KEYWORDS

Atmel microcontroller; Embedded System; Gas detecting sensors; GSM Modem; Vehicle Safety;

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ANALYSIS AND COMPARISON STUDY OF DATA MINING ALGORITHMS USING RAPIDMINER

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ABSTRACT

Comparison study of algorithms is very much required before implementing them for the needs of any organization. The comparisons of algorithms are depending on the various parameters such as data frequency, types of data and relationship among the attributes in a given data set. There are number of learning and classifications algorithms are used to analyse, learn patterns and categorize data are available. But the problem is the one to find the best algorithm according to the problem and desired output. The desired result has always been higher accuracy in predicting future values or events from the given dataset. Algorithms taken for the comparisons study are Neural net, SVM, Naïve Bayes, BFT and Decision stump. These top algorithms are most influential data mining algorithms in the research community. These algorithms have been considered and mostly used in the field of knowledge discovery and data mining.

KEYWORDS

Data mining, Machine Learning (ML), Learning algorithms, Classification algorithms Neural Net, SVM, Naive Bayes, BFT, Decision Stump.

Full Text: https://aircconline.com/ijcsea/V6N1/6116ijcsea02.pdf

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BASIC ANALYSIS ON PROSODIC FEATURES IN EMOTIONAL SPEECH

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ABSTRACT

Speech is a rich source of information which gives not only about what a speaker says, but also about what the speaker's attitude is toward the listener and toward the topic under discussion—as well as the speaker's own current state of mind. Recently increasing attention has been directed to the study of the emotional content of speech signals, and hence, many systems have been proposed to identify the emotional content of a spoken utterance. The focus of this research work is to enhance man machine interface by focusing on user's speech emotion. This paper gives the results of the basic analysis on prosodic features and also compares the prosodic features of, various types and degrees of emotional expressions in Tamil speech based on the auditory impressions between the two genders of speakers as well as listeners. The speech samples consist of "neutral" speech as well as speech with three types of emotions ("anger", "joy", and "sadness") of three degrees ("light", "medium", and "strong"). A listening test is also being conducted using 300 speech samples uttered by students at the ages of 19 -22 the ages of 19-22 years old. The features of prosodic parameters based on the emotional speech classified according to the auditory impressions of the subjects are analyzed. Analysis results suggest that prosodic features that identify their emotions and degrees are not only speakers' gender dependent, but also listeners' gender dependent.

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TAXONOMY OF CLOUD SECURITY

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ABSTRACT

Cloud computing is envisioned as the next generation architecture for IT Enterprises, and has proliferated itself due to the advantages it provides.Cloud computing provides solutions for carrying out efficient, scalable and low cost computing. The pay per usage concept of Cloud computing increases the resource utilisation of a vendor's computing power and resources; at the same time,it results in reduced hardware costs forits users. It also provides access mobility, easier maintenance, scalabilityand operability in terms of its management and usage. Because of the facilities and solutions it provides to the industry for the next generation computing, it is vulnerable to a variety of known and unknown attacks from attackers.Hence, securinga Cloud environment is a critical problem that needs urgent attention.This articlefocuses on a taxonomy of possible attacks on a Cloud environment and a taxonomy of the defence .The attack taxonomy describes existing threats on Cloud security, and the defence taxonomy gives a classification of the various counter measures that can be taken to protect the Cloud environment from such attacks. The aim of this article is to provideresearchers, academicians and industry with a better understanding of existing attacks and defence mechanisms on Cloud security.This is to provide a clearvision of the challenges that should be worked onto ensure next generation security forCloud computing.

KEYWORDS

Cloud, security, attack, defence, Taxonomy, Intrusion, Detection.

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FPGA DESIGN FOR H.264/AVC ENCODER

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ABSTRACT

In this paper, we describe an FPGA H.264/AVC encoder architecture performing at real-time. To reduce the critical path length and to increase throughput, the encoder uses a parallel and pipeline architecture and all modules have been optimized with respect the area cost. Our design is described in VHDL and synthesized to Altera Stratix III FPGA. The throughput of the FPGA architecture reaches a processing rate higher than 177 million of pixels per second at 130 MHz, permitting its use in H.264/AVC standard directed to HDTV.

INDEX TERMS

H.264/AVC, Video coding, VHDL, FPGA architecture.

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PROPOSAL OF A TWO WAY SORTING ALGORITHM AND PERFORMANCE COMPARISON WITH EXISTING ALGORITHMS

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ABSTRACT

An algorithm is any well-defined procedure or set of instructions, that takes some input in the form of some values, processes them and gives some values as output. Sorting involves rearranging information into either ascending or descending order. Sorting is considered as a fundamental operation in computer science as it is used as an intermediate step in many operations. A new sorting algorithm namely 'An Endto-End Bi-directional Sorting (EEBS) Algorithm' is proposed to address the shortcomings of the current popular sorting algorithms. The goal of this research is to perform an extensive empirical analysis of the newly developed algorithm and present its functionality. The results of the analysis proved that EEBS is much more efficient than the other algorithms having O(n2) complexity, like bubble, selection and insertion sort.

KEYWORDS

End-to-End Bi-directional sort (EEBS), algorithms, selection sort, bubble sort, insertion sort.

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