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RFID Based Intelligent Book Finder Using Ultra High Frequency Sensor

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ABSTRACT: Locating items rapidly and accurately has become a crucial part of our modern library. Accurate locating not only saves time and money but also reduces waste, as products do not get lost along supply chains. One promising indoor tracking method is provided by radio-frequency identification (RFID) technology. The main benefit of RFID technology is the ability to inventory items simultaneously and rapidly without the requirement of line of sight to thetarget. Because RFID tags are attached to various objects and are used indifferent environments, RFID engineers are required to design RFID tags thatoperate reliably within varying environments and medium materials. In this approach, the booksare equipped withan ultrahigh frequency (UHF) RFID tag and can be located using a hand-heldRFID reader device. In addition to locating the books, the system keeps the bookinventory up to date.

KEYWORDS: RFID, Library Management System, Proteus Design Suite.

I. INTRODUCTION

RFID stands for Radio-Frequency Identification. The acronym refers to small electronic devices that consist of a small hip and an antenna. The chiptypically is capable of carrying 2,000 bytes of data or less. RFID is a general term that is used to describe a system that transmits the identity (in the form of a unique serial number) of an object wirelessly, using radio waves. This is sometimesreferred to as contact-less technology and a typical RFID system is made up of three components: tags, readers and the host computer system. An RFID tag is a tiny radio device that is also referred to as a transponder, smart tag, smart label or radio barcode. The tag comprises of a simple silicon microchip attached to a small flat aerial and mounted on a substrate. The whole device can then be encapsulated in different materials (such as plastic) dependent upon its intended usage. Thefinished tag can be attached to an object, typically an item, box or pallet and read remotely to ascertain its identity, position or state.

II. RELATED WORK

The paper [1] presents Event-driven architecture not only shares many of the same characteristicswith service-oriented architecture, such as modularity, loose-couplings, andadaptability, but also has ability to process event in an asynchronous way. So it isable to respond better to real-time changes and Integrate the system. This article is concentrate on RIFD information management system design which base on EDA/SOA. The paper [2] proposes RFID provides a good wireless platform tofacilitate indoor positioning. However, duo to the small width of each book spine,adopting positioning based RFID alone is not enough to locate books in a library. In this work, they combine image matching with L-GEM based RBFNN to enhancethe accuracy and robustness of the book locating system. We apply this newmethod in a library to position the certain books. Experimental results show thatthe proposed method is highly accurate and robust to white noise of RFID signals. The paper [3] presents a RFID Intelligent Book Conveyor using Radio FrequencyIdentification (RFID) technology and embedded technology, they also exploited GUI using Qt integrated development environment. This book conveyor is a portable equipment with complete functions, friendly interface and convenient operation. It can greatly improve the work efficiency of librarians and the service quality of the library. The paper [4] proposes a smart Book-LOCating System called BLOCS with two location modes using RFID technology – single book mode and book list mode. The single book mode provides users to find the bookshelf

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An Efficient Approach towards Tidal Power Production Using Vertical Planar Motion

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ABSTRACT: In power production, the tidal energy plays a vital role. This paper deals with the new initiative method to produce energy with latest innovation and cheaper cost. The waves with high force, hits the piston which then pushes the vertical plate. The plate is connected with the dynamo with the help of the shaft to make the motion easy. As the force of the waves gets increased, the dynamo gets rotated andso the power is generated.The power generated from the dynamo is the dc power and this is been stored in the battery. The stored power is then converted as the ac power using the inverter with the help of the transistor 2N3055 which itself also acts as a power booster in order to boost up the power that is generated. As the dc power is converted to the ac power this can be used to run a load.

KEYWORDS: Vertical plate, Dynamo, Transistor 2N3055, Inverter.

I. INTRODUCTION

Tidal power, also called tidal energy, is a form of hydropower that converts the energy obtained from tides into useful forms of power, mainly electricity. Although not yet widely used but tidal power has potential for future electricity generation. Tides are more predictable than wind energy and solar power. It is very useful for the coastal states as almost complete south India and partial western part of India is surrounded by sea border. Due to out-dated system, the biggest operating tidal station in the world, La Rance in France, generates 240MW of power but in India it is very less than 50MW. Among sources of renewable energy, tidal power has traditionally suffered from relatively high cost and limited availability of sites with sufficiently high tidal ranges or flow velocities, thus constricting its total availability. The tidal power is taken from the earth's oceanic tides. Tidal forces are periodic variations in gravitational attraction exerted by celestial bodies. These forces create corresponding motions or currents in the world's oceans.

II.EXISTING SYSTEM

There are many ways of generating electricity from the tides. One among them is the use of turbines in the oceans. Tidal turbines are very much like underwater windmills except the rotors are driven by consistent, fast-moving currents. The submerged rotors harness the power of themarine currents to drive the generators, which in turn produce electricity. Water is 832 times denser than air and consequently tidal turbine rotors can be much smaller than wind turbine rotors thus they can be deployed much closer together and still generate equal amount of electricity. During operation, the force of the tidal flow in Strangford Lough is equivalent to a 345 mph wind generating 100 tonnes of thrust on the rotors.

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An Efficient Ranking and Predicting based Keyword Query Interface

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Abstract— The amount of information in the world is increasing exponentially. Keyword search has proven to be an effective method to discover and retrieve information from database as evidenced by the success of search engines. Unfortunately, much common information retrieve and management systems do not support the familiar query search that people how expect. Keyword Query Interface (KQI) technique is most common technique for access data from the database due to their flexibility and exploring the data and ease of use in searching, but it is most suffer from low precision and low ranking quality. In this paper we evaluate the difficulty of a hard keyword query over databases. And we proposed the Structural Robustness (SR) score based ranking algorithm can compute the relevance of the query. Our experiments results show that our proposed ranking algorithm efficiently to predict the difficulty of the query with higher accuracy.

Index Terms – Keyword Query, Unstructured Database, Robustness, Query Efficiency

1 INTRODUCTION

Data mining is a field which has seen rapid advances in recent years [8] because of the immense advances in hardware and software technology which has led to the availability of different kinds of data. This is particularly true for the case of structured data, where the development of hardware and software platforms for the web and social networks has enabled the rapid creation of large repositories of different kinds of data. While structured data is generally managed with a database system, and the data is typically managed via a search engine due to the lack of structures [3]. A search engine enables a user to find useful information from a collection conveniently with a keyword query.

Predicting the retrieval performance or determining the degree of difficulty of a query is a challenging research area which has received a lot attention recently [5, 7]. The aim is to create an efficient method (predictors) for the task, as a reliable low precision and accurate prediction mechanism would enable the creation of more adaptive and intelligent retrieval systems. Keyword query interface is a popular technique for retrieve information from database. Since any entity in a data set that contains the query keywords is a potential answer, keyword queries typically have many possible answers. The KQI must identify the information needs behind keyword queries and rank the answers so that the desired answers appear at the top of the list [1], [2].

Researchers have proposed lots of techniques to detect difficult queries over text document collections. However, these techniques are not applicable to our problem since they ignore the structure of the database. In particular, as mentioned earlier, a KQI must assign each query term to a schema elements in the database. It must also distinguish the desired result types. We empirically show that direct adaptations of these techniques are ineffective for structured data.

In this paper we evaluate difficult keyword query over databases and propose a novel method to detect such queries. We have used structured data to gain insight about the

degree of the difficulty of a query given to the database. We have implemented some of the most popular and representative algorithms for keyword search on databases and used them to evaluate our techniques. The results show that our method predicts the degree of the difficulty of a query efficiently and effectively.

2 RELATED WORK

Researches have been proposed many methods to predict the difficult query over structured and unstructured documents [9], [10]. Among recent systems that enable keyword-based search we find Microsoft DB Xplorer [Chaudhuri et al., 2006]. It uses a symbol table to store tables, columns, and rows of all data values, which is looked up during the search to identify the locations that contain all the keywords appearing in the question. Anyway there is no need to maintain a symbol table if we can rely on the actual database and its underlying metadata.

The BANKS [Hulgeri et al., 2010] and Object Rank [Balmin et al., 2012] systems apply ranking to keyword search over databases: results are ranked with respect to their relevance, computed using an approach similar to PageRank in BANKS while Object Rank applies authority-based ranking. One beneficial feature of BANKS is that it also takes into account metadata while performing the search. Both these systems use graphs to model relational databases,

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EFFICIENT TRACKING MECHANISM ON MOBILE NETWORK FOR MOVING GROUPS VIA SELF-GOVERNING SAFE REGION

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***Abstract*— In applications the social networking services like online games,online solving apps and multiple moving users form a group and wish to be continuously notify the best meeting point from their locations. We propose a novel monitoring problem, Efficient Notification of Meeting Points for moving user given a set of moving user U, a set of points of interest (POI) P, ENMP check continuously reports the optimal meeting point po ∈ P to users in U such that their maximum distance of the meeting point is to minimized.It motivated to the client to communicate with each other and it contain many client which is communicating to the server. We propose novel solutions based on circular safe region and tile based safe technique. Safe regions are a set of two regions such that if each user stays inside own, the result will remain the same, thus avoiding the high communication between users and the server.**

***Keywords;* Efficient notification of meeting point(EMNP),Point of interest (POI)y,Locality Sum- optimal meeting point(SOMP)**

I. Introduction

Data Mining is an analytic process that to designed and explore a data.The overall goal of the data mining process is to extract information from a data query and to transform it into an understandable process.The ultimate goal of the date mining is easily identified is also called as prediction .So the predictive data mining is one of the most common type of data mining and are the most common direct business applications and Notified the best meeting point from their locations.Now first we examine that the shapes of safe region for our problem's context and propose feasible approximations for them. Design efficient algorithms for computing these safe regions. To study a variant the problem of the safe region is called the sum-optimal meeting point and that to extend our solutions to solve this type of variant. In this project we are using data mining why means more number of data have to stored in the database for the users purpose. Whole process are done by the server only. It's going to done by the app.In this project we are using two types of region they are circular based safe region and tile based safe region. In circular based Approximate the Maximal Safe Regions Of users by circles due to simplicity. For Circular Safe region we are using the algorithm called Divide and Conquer. Designing the circular safe regions which are efficient to compute. In the safe region the shape zone is defined by so-called guard objects its used to find effective safe zone. In guard objects once the upper bound value is constant then the upper bound value is constant we won't considered In the initial value the R is not efficient so we are finding with K On query processing the safe zone the query processing output will be the same inside the safe region may be 1. In the tile's, the tile can be easily represent the underestimated shape and thus serves as a clear approximation of maximal safe regions. Developing tile-based safe regions that focus on minimizing communication cost. R< ||p ,uj||sum - ||p0 ,ui||sum/2m safe region both tile and circular..

II. RELATED WORK

Feifeili , Bin Yao ; Kumar ,P.[1] In this the proposed algorithm Given a set of points P and a query set Q, a group enclosing query (Geq) which fetches the point p* ∈ P such that the maximum distance of p* to all points in the Q is minimized. This problem is equal to the Min-Max case (minimizing the maximum distance) ofthe nearest neighbor queries for the spatial databases.The solution implemented are this work is to first design the new exact solution by exploring in new geometrical are insights, such as minimum enclosing ball, the convex hull, and the furthest voronoi diagram of the query group. To further to reduce the query cost, especially when in the dimensionality increases, we are turn in to approximation algorithms. Ourmain aim for the approximation algorithm has a worst case √2-approximation ratio if one can find the exact and nearest neighbour for the point. In practice, its approximation ratio never exceeds 1.05 for a large number of data sets its up to six dimensions. We also discuss how to extend it to higher dimensions and so that it has a very good approximation quality (still close to 1) and low query cost. In fixed dimensions, √2-approximation algorithm is used to get a approximate solution for the Geographically problem. Both approximation algorithms have a query cost in any fixed node, where N and M are the sizes of the data set P and query group Q. External experiments are done on both synthetic and real data sets, up to 10 million points and 74 dimensions, confirm the efficiency and usability of the proposed algorithms, especially their significant improvement over the state-of-the-art method.

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An Improved Query Ranking and Hardness prediction Algorithm for Query Interfaces on Databases

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ABSTRACT

The ability to make accurate predictions of the outcome of an event or a process ishighly desirable in several contexts of human activity.Keyword queries on databases give simple access to information, yet frequently experience the ill effects of low positioning quality, i.e., low accuracy and additionally review, as appeared in late benchmarks. It is valuable to recognize queries that are probably going to have low positioning quality to enhance the client fulfillment. The existing work has not focused about the semantic significance among the queries that are presented by the clients, which will prompt erroneous outcome recovery. To overcome this issue in the proposed work, we devise efficient algorithms to compute the degree of difficulty using query-time, and show that the overhead is very small compared to the query execution time by utilizing the Word Net tool. This will prompt an exact to k recovery of record because of utilization of semantic significance of the archives in web index. Our approach has shown a great improvement in accuracy of predicting hard keyword queries.

Keywords: *Query Ranking, Databases, Hardness prediction Algorithm, Query Retrieval Prediction Algorithms.*

INTRODUCTION

With a specific end goal to decide the connection between the evaluation and the application of query effectiveness prediction strategies, it is required to apply them in real situations. This progression is frequently not executed as obvious in the solid complexity between the quantity of prediction algorithms that have been proposed throughout the years, and the quantity of distributions committed to applying those prediction strategies in an operational setting. It accordingly remains generally obscure when a prediction technique can be considered to perform all around to be employable in a versatile retrieval framework.

In this paper we investigate the relationship between the rank correlationcoefficient ô a prediction method achieves and the prediction method's effect onretrieval effectiveness in two operational settings: Meta-Search (MS)[1,2]and Selective Query Expansion (SQE)[3,4]. In SQE,pseudo-relevance feedback is not applied uniformly to all queries, insteadthe decision whether to apply automatic query expansion (AQE) is made for eachquery individually.

Our goal is to determine at what levels of correlation a prediction technique can be thought to be of sufficiently high quality to create unmistakable positive changes in recovery effectiveness in a versatile recovery segment. In the event that wecould decide such edges, we could interpret from acorrelation-based evaluation, regardless of whether the nature of a prediction technique is adequate for a specific application.In the event that the effectiveness of the versatile framework is higher than the effectiveness of the benchmark framework, we may presume that the correlation of the prediction technique accomplished, is adequate for the predictor to be reasonable practically speaking. In view of the result of a solitary prediction strategy and one informational index, we cannot make inferences about the level of correlation that shows a sufficiently high predictor accuracy to enhance the recovery effectiveness of a versatile framework in general.

Related works

The two SQE scenarios that were assessed by Yom-Tov et al[4]depend on the thought that simple inquiries, that is questions bringing about high recovery effectiveness, additionally enhance with the application of pseudo-pertinence criticism. On the other hand, inquiries that are considered troublesome and which in this way accomplish just low recovery

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Audio Steganography: An Approach towards Secure Information Transmission System

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***Abstract* - This paper proposes a novel reversible audio data hiding scheme over encrypted domain. Data embedding is achieved through a public key modulation mechanism, in which access to the secret encryption key is not needed. At the decoder side, a powerful decoder is designed to distinguish encrypted and non-encrypted audio patches, allowing us to jointly decode the embedded message and the original audio signal. Compared with the state-of-the-art methods, the proposed approach provides higher embedding capacity and is able to *perfectly* reconstruct the original audio as well as the embedded message. Extensive experimental results are provided to validate the superior performance of our scheme.**

I. INTRODUCTION

Steganography is the art and science of writing hidden messages in such a way that no one, apart from the sender and intended recipient, suspects the existence of the message, a form of security through obscurity. Steganography works by replacing bits of useless or unused data in regular computer Files (such as graphics, sound, text, HTML, or even floppy disks) with bits of different, invisible information. This hidden information can be plain text, cipher text, or even images.

In a computer-based audio Steganography system, secret messages are embedded in digital sound. The secret message is embedded by slightly altering the binary sequence of a sound file. Existing audio Steganography software can embed messages in WAV, AU, and even MP3 sound files. Embedding secret messages in digital sound is usually a more difficult process than embedding messages in other media, such as digital images. These methods range from rather simple algorithms that insert information in the form of signal noise to more powerful methods that exploit sophisticated signal processing techniques to hide information.

Thus the main purpose of this seminar is to explain Audio Steganography and algorithms commonly employed for Audio Steganography and its applications.

II. AUDIO STEGANOGRAPHY

Audio is sound within the acoustic range available to humans. An audio frequency (AF) is an electrical alternating current within the 20 to 20,000 hertz (cycles per second) range that can be used to produce acoustic sound. Steganography is the art and science of invisible communication. This is accomplished through hiding information in other information, thus hiding the existence of the communicated information. The word steganography is derived from the Greek words "stegos" meaning "cover" and "grafia" meaning "writing" defining it as "covered writing". In image steganography the information is hidden exclusively in images. Steganography differs from cryptography in the sense that where cryptography focuses on keeping the contents of a message secret, steganography focuses on keeping the existence of a

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Best Effort Cloud Service for Ultra-low-Latency Guaranteed-rate Internet

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ABSTRACT: An enhanced-internet network that provides ultra-low-latency guaranteed-rate (GR) communications for cloud services is proposed. The network supports traffic flows receive low-jitter GR service over virtual-circuit-switched (VCS) connections with negligible buffering and queueing delays, up to 100% link utilization, deterministic end-to-end quality-of-service (Qos) guarantees, and improved energy efficiency. End-to-end delays are effectively reduced to the fiber "time of flight." A new router scheduling problem called the bounded normalized-jitter integer-programming problem is formulated. A fast polynomial-time approximate solution is presented, allowing TDM-based router schedules to be computed in microseconds. We establish that all admissible traffic demands in any packet-switched network can be simultaneously satisfied with GR-VCS connections, with minimal buffering. Each router can use two periodic TDM-based schedules to support GR-VCS connections, which are updated automatically when the router's traffic rate matrix changes. The design of a silicon-photonics all-optical packet switch with minimal buffering is presented. The enhanced-internet can:1) reduce router buffer requirements by factors of ≥1000; 2) increase the internet's aggregate capacity; 3) lower the internet's capital and operating costs; 4) lower greenhouse gas emissions through improved energy efficiency.

KEYWORDS: buffer sizes, cloud, cloud computing, data centers, diffserv, energy efficiency, future internet, low latency, quality of service (Qos), routing, scheduling.

I. INTRODUCTION

The BE internet is a universal platform for supplying digital services. To achieve relatively poor Qos guarantees, it depends on significant overprovisioning bandwidth which gives output as poor utilization, throughput and energy efficiency in references [1]-[10]. A simple change to the best-effort internet results in packet switching network which gives support to guaranteed-rate virtual circuit switched (GR-VCS) connections known to the enhanced internet. The static-GPS algorithm, the dynamic-GPS algorithm and the random algorithm are the three flow scheduling algorithms are defined and analyzed.

A new paradigm offered by a cloud for service delivery. CSPs (cloud service providers) deploy new services on global scale and compute facilities from cloud service infrastructure providers. Cloud services includes Netflix and you tube, and high performance computing systems in the cloud. To create a global intercloud, global services infrastructure are created by an public and private clouds. The internet faces challenges due to its lack of Qos guarantees for critical-time, poor utilization and energy efficiency as a service oriented infrastructure. The greentouch consumption stated that energy consumption is achieved by an significant reduction in the energy costs.in network, ultra-low latency for machine to machine communication has received considerable attention lately. Smooth traffic flows with low latencies, deterministic qos guarantees, and improved energy efficiency are provided by enhanced-internet. The Cloud offers a new paradigm for service delivery. Cloud service providers (CSPs) can deploy new

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Scalable Identity-Based Distributed Provable Data Possession in Multi-Cloud Storage

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Abstract: Currently the client stores his data on multi-cloud servers, in which the distributed storage and integrity checking are indispensable. In multi-cloud environment, distributed provable data possession is an important element to secure the remote data. Based on the bilinear pairings, a concrete ID-DPDP protocol is designed. The proposed ID-DPDP protocol is provably secure under the hardness assumption of the standard CDH (Computational Diffie-Hellman) problem. In addition to the structural advantage of elimination of certificate management, proposed ID-DPDP protocol is also efficient and flexible. The proposed scheme is extended to support scalable and efficient public auditing in Cloud Computing. The scheme achieves batch auditing where large data auditing tasks from users can be performed simultaneously by the TPA by splitting them into batches.

Index Terms: *Cloud computing, Provable data possession, Identity-based cryptography, Distributed computing, Bilinear pairings*

Introduction

Cloud computing has become an important theme in the computer field. Essentially, it takes the information processing as a service, such as storage, computing. It relieves of the burden for storage management, universal data access with independent geographical locations. At the same time, it avoids of capital expenditure on hardware, software, and personnel maintenances, etc. Thus, cloud computing attracts more intention from the enterprise. The foundations of cloud computing lie in the outsourcing of computing tasks to the third party. It entails the security risks in terms of confidentiality, integrity and availability of data and service. The issue to convince the cloud clients that their data are kept intact is especially vital since the clients do not store these data locally. Remote data integrity checking is a primitive to address this issue.For the general case, when the client stores his data on multi-cloud servers, the distributed storage and integrity checking are indispensable. On the other hand, the integrity checking protocol must be efficient in order to make it suitable for capacity-limited end devices. Thus, based on distributed computation, we will study distributed remote data integrity checking model and present the corresponding concrete protocol in multi-cloud storage.

Proposed System

An ID-DPDP protocol comprises four different entities which are Client, CS (Cloud Server), Combiner, and PKG (Private Key Generator). This protocol comprises four procedures: Setup, Extract, TagGen, and Proof. 1. In the phase Extract, PKG creates the private key for the client. 2. The client creates the block-tag pair and uploads it to combiner. The combiner distributes the block-tag pairs to the different cloud servers according to the storage metadata. 3. The verifier sends the challenge to combiner and the combiner distributes the challenge query to the corresponding cloud servers according to the storage metadata. 4. The cloud servers respond the challenge and the combiner aggregates these responses from the cloud servers. The combiner sends the aggregated response to the verifier. Finally, the verifier checks whether the aggregated response is valid. The concrete ID-DPDP construction mainly comes from the signature, provable data possession and distributed computing. The signature relates the client's identity with his private key. Distributed computing is used to store the client's data on multi-cloud servers. At the same time, distributed computing is also used to combine the multi-cloud servers' responses to respond the verifier's challenge. Based on the provable data possession protocol, the ID-DPDP protocol is constructed by making use of the signature and distributed computing.

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Orthogonal Approximation of DCT in Video Compressing Using Generalized Algorithm

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ABSTRACT

Approximation of Discrete cosine transform (DCT) is useful for reducing its computational complexity without significant impact on its coding performance. Most of the existing algorithms for approximation of the DCT target only the DCT of small transform lengths, and some of them are non-orthogonal. We perform recursive sparse matrix decomposition and make use of the symmetries of DCT basis vectors for deriving the proposed approximation algorithm. Proposed algorithm is highly scalable for hardware as well as software implementation of DCT of higher length.We demonstrate that the proposed approximation of DCT provides comparable or better image and video compression performance than the existing approximation methods. It is shown that proposed algorithm involves lower arithmetic complexity compared with the other existing approximation algorithms. We have presented a fully scalable reconfigurable parallel architecture for the computation of approximateDCT based on the proposed algorithm. One uniquely interesting feature of the proposed design is that it could be configured for the computation configured for the computation of a 32-point DCT or for parallel computation of two 16-pointDCTs or four 8-point DCTs with a marginal control overhead. The proposed architecture is found to offer many advantages in terms of hardware complexity, regularity and modularity. Experimental results obtained from FPGA implementation show the advantage of the proposed method.

Keywords: Algorithm-Architecture Code Sign, DCT Approximation, Discrete Cosine Transform (DCT), high Efficiency Video Coding (HEVC)

I. INTRODUCTION

The discrete cosine transform (DCT) is popularly used inimage and video compression. Sincethe DCT is computationally intensive, several algorithms have been proposed in theliterature to compute itefficiently.Recently, significant work has beendone to derive approximate of 8-point DCT for reducing the computational complexity [4]–[9].

The main objective of the approximation algorithms is to get rid of multiplications which consume most of the power and computation- time, and to obtain meaningful estimationof DCT as well. Haweelhas proposed the signed DCT (SDCT) for 8-8 Blocks where the basis vector elements are replaced by their sign, i.e,Bouguezel-Ahmad-Swamy (BAS) have proposed a series of methods. They have provided a good estimation of the DCT by replacing the basis vector elements by 0, 1/2, 1. In the same vein, Bayer and Cintra have proposed two transforms derived from 0 and 1 as elements of transform kernel, and have shown that their methods perform better than the method in, particularly for low- and high-compression ratio scenarios. The need of approximation is more important for higher-size DCT since the computational complexity of the DCT grows nonlinearly.

On the otherhand, modern video coding standards such as high efficiency video coding (HEVC) [10] uses DCT of larger block sizes (up to 32) in order to achieve higher compression ratio. But, the extension of the design strategy used in H264 AVC for larger transform sizes, such as 16-point and 32-point is not possible.

Besides, several image processing applications such as tracking and simultaneous compression and encryption require higher DCT sizes. In this context, Cintra has

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Mathematical Tutorial System (MTS) Using Fuzzy Logic and Multi-Agent System

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ABSTRACT

Appropriate use of computer technology in the learning process has been lacking and many web-based and standalone tutorial systems in today's market-place do not provide material that teaches students in an enjoyable and effective way. The Mathematical Tutoring System (MTS) is one which provides direct customized feedback to students. It also guides and monitors student progress. Our aim is to design an instructional planner for an intelligent tutoring system. We use the combined approach of Fuzzy logic and Multiagent System (MAS). The fuzzy logic determines the next level (objective) to be presented to the student based on the current and past performance of the objectives. The Multiagent system on the other hand decides the set of activities to be presented in the objective. The educational objective of the MTS presented in our work is the number concept and the objectives of Problems in primary education curriculum.

Keywords: Fuzzy Logic, Multi Agent System, Mathematical Tutorial System, Similarity Calculation

1. INTRODUCTION

The educational objective of the MTS presented in our work is the number concept and the objectives of Problems in primary education curriculum. The student knowledge varies from one person to another. So the Instructional Planner for an MTS must dynamically adapt to each students to teach the number and addition concepts. So we used the combined approach of fuzzy logic and multiagent systems.

Each student will be given a username and password after the registration process. The set of activities carried out by the student varies depending upon their knowledge. Basically the students are categorized into kindergarten and Primary. The primary is in turn classified as:

- Fear of Failure
- Motivated
- Hyperactive

Each student will be among one of the above mentioned classifications. The classification is done based on the pre-test .Then a set of objectives are selected for a particular student. Each objective consists of set of activities which are to be carried out by the student during the path of learning. Based on the performance in an objective the student will be guided to the respective levels.

The fuzzy logic determines the next level (objective) to be presented to the student based on the current and past performance of the objectives. The work of multiagent system is to select the appropriate activity to be presented to the student for that objective. This performance of each student is monitored by the MTS and it is updated in the Student Database. The system uses multimedia such as video and images which helps the student in acquiring the concepts.

The student can quit at any time. On quitting, the system will record the student's progress. When he enters next time, he will be guided according to his previous stored information.

Fuzzy is to solve a new problem by recalling a previous situation which is similar and by reusing the information and knowledge of that situation. It will attempt to find the case or cases in the case base that most closely match the current query case [1].

From the case base previous identical case is retrieved. If the current problem and previous problem are

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A Fast Panorama Stitching Method of Image Sequence

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Abstract: *An image stitching application panorama gives serious distortion when compositing a long image sequence. To overcome the distortion, improved algorithm is proposed in this paper, including altering the way of selecting the reference image and putting forward a method that can compute the transformation matrix for any image of the sequence to align with the reference image in the same coordinate space. Additionally, the improved stitching method dynamically selects the next input image based on the number of SIFT matching points. Compared with the traditional stitching process, the improved method increases the number of matching feature points and reduces SIFT feature detection area of the reference image. The experimental results show that the improved method can not only accelerate the efficiency of image stitching processing, but also reduce the panoramic distortion errors, and finally we can obtain a pleasing panoramic result.*
Index Terms: *Image Stitching, Image alignment, SIFT, Wide baseline images, Image Registration.*

I. Introduction

Image Stitching is a process to combine a sequence of images together, mutually having overlapping areas, resulting into a seamless, smooth panoramic image [1]. The hand-held camera has limited resolution and small field-of-view, while the image stitching can get high-resolution and high-quality panorama by using hand-held equipment. Image stitching has become a hotspot in the field of computer vision, image processing, and computer graphics.

Image registration [2] is an important step in the image stitching process. The quality of image stitching greatly depends on the accuracy of image registration. According to the different methods for image registration, the image stitching algorithms are divided into two categories generally, region-related image registration [3] and feature-based image registration [4, 5]. Region-related image registration studies the relationship of the same dimension blocks between the input image and the reference image and computes their similarity degree. But when the image is rotated or resized, this method would not result in a desired result. While the textures are too strong or too weak, the result would also show enormous stitching errors. Feature-based image registration method uses mathematical models to find the abstract description features of the useful pixel information by comparing the description features to find the correspondence connection between the input image and the reference image. However, the traditional feature detection methods such as Harris corner and Susan operator do not have the invariance properties. So a stable feature detection method is requested for image stitching process. In 2004, Lowe proposed local scale-invariant image feature extraction algorithm (SIFT) [6], which received a good performance from different scale, different rotation direction, and perspective distortion images.

This paper uses the feature-based image registration method and selects scale-invariant SIFT features to implement panorama image stitching. The aim of image stitching is to transform multiple source images with areas overlapping each other to unify in the same coordinate system through transformation matrixes. Therefore, it is important to select a reference coordinate system. The traditional stitching process [7–9] constructs panoramic images from ordered image sequences, stitching step by step from left to right. The first image of the sequence is selected as the reference image. Subsequently, select the following stitching result as the next new reference image in the traditional stitching process. The traditional stitching process cumulates the matching errors of each stitching process in the reference image, which would be seriously distorted [10]; when the set of image sequences is large, it affects the quality of panoramic result. The improved method proposed in this paper first implements image registration for all adjacent images in the sequence and calculates the transformation matrix between the adjacent images and then took the middle image of the sequence as the reference image. According to the transformation matrixes of all adjacent images, the improved method can realize image anywhere in the sequence transforms to the coordinate space of the reference image. Therefore, all images in the sequence can be unified to the same coordinate system after undergoing all stitching processes. The experimental results show that the improved method reduces the distortion errors of panorama and saves the time of stitching process; moreover, it enhances the quality of the stitching result.

The rest of this paper is organized as follows. Section 2 describes the SIFT algorithm for extracting image features and the RANSAC algorithm for purifying the matching feature points; meanwhile it obtains the

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Foot Injury Detection Using K-Means Clustering and Mean Shift Segmentation Algorithm

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Abstract- **Diabetic foot ulcer is a major complication of diabetes mellitus and probably the major component of the diabetic foot. Its significant transcendence is related to a higher incidence and amputation percentage as well as deaths. In present days, clinicians and nurses mainly base of their wound assessment on visual examination of wound size, healing status, and colour of wound. This paper aims to become the first link to optimize the diabetic's foot evaluation through the introduction of Digital Image processing techniques. In this paper we proposed easy method of wound image analysis system implemented on the MATLAB using Mean Shift Segmentation Algorithm. Patient wound image is processing under different steps such as pre-processing, RGB to Gray conversion, Segmentation, K-means clustering algorithm, boundary line detection, healing status. Healing status is depending on blue, yellow, green colour evolution model. Wound image is collected in DHANABAKKIYAM diabetic centre, Tiruvannamalai. We proved the implementation of this algorithm to a series of trial images to show the efficient and high accurate result of wound healing status.**

Key words - Diabetic, wound assessment, K-means clustering and mean shift algorithm, MATLAB.

I INTRODUCTION

Today, there are more than 65 million people affected by diabetes in India, and that number only seems to be rising, in rural and urban areas alike. The diabetic foot is one of the most frequent and devastating complications. According to Diabetes, DEAKIN university survey, there were an estimated 40 million persons with diabetes in India in 2007 and this number will be rise to almost 75 million people by 2025. The countries with the largest number of diabetic people will be India, China and USA by 2030. It is estimated that every fifth person with diabetes will be an Indian. Due to these sheer numbers, the economic burden due to diabetes in India is amongst the highest in the world. There are so many problems with recent treatment for diabetic foot ulcer. In existing methods were all using region of interest of the foot ulcer skin. Initially, patients should go to hospital on a common basis for check the wound by clinicians. Because of this so many disturbances occurred such as inconvenient, cost and time consuming for clinicians and patients. Second, wound assessment process is processed under Visual Examination. The description of wound analysis gives by physical dimension and tissue colour, it will provide healing status. Steps of wound analysis system is shown in figure 3 and explained in further steps.

Image processing technique is a potential solution and it made different tasks such as measurement of affected area, unaffected area and total area of wound.

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An Efficient Content-Based Medical Image Retrieval Using Local Vector Pattern

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Abstract

This paper presents image feature extraction and matching framework for image retrieval used in medical image database management and disease diagnosis applications. Since the process of retrieval has facilitated one to find out the required medical image automatically, based on its content, the proposed system is called as Content-Based Medical Image Retrieval (CBMIR) system. The goal of CBMIR system is to enhance visual information analysis by increasing the overall search capabilities to physicians. The proposed system encompasses image feature extraction scheme using Local Vector Pattern (LVP) descriptor and image matching using histogram to retrieve relevant images from a MRI brain images database. The main characteristics of the MRI images are their poor contrast, sensitive to noise and large intensity variations. These challenges are tackled by implementing LVP which was proved as best local feature extracting approach in the existing system with the first and second order derivatives to improve the recognition performance of the system. Ultimately, results were compared with existing local pattern descriptors such as Local Binary Pattern (LBP), Local Derivative Pattern (LDP) and Local Tetra Pattern (LTrP). We proved that an average recognition rate obtained for implementing LVP in medical image database is better than the other state-of-the-art local pattern descriptor techniques.

Top

Keywords:

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