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Academic Science

Extracting News from Online Database – News Clustering based on Content Ranking

Prof.(Dr) S.R.Dhore

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Abstract— We present NewsMaster, an approach to collect, cluster and categorize and select news articles from Internet.Due to the perception of cheap publishing, organizations have been producing enormous amount of content online since the hidden cost of maintenance and usability has always been neglected. This presents the opportunity for automatically maintaining crisp and usable content, especially in news articles. In this paper, we use machine learning algorithm to extract features from different classes of content and cluster them under an umbrella topic. For each cluster, we then go on to predict popularity of documents using additional features based on the content only. We conduct our experiments on different news corpuses. Our study also serves to remove information redundancy in multiple articles.

Keywords—News, redundancy, content popularity, machine learning

I. INTRODUCTION

News articles are very dynamic in nature due to continuously developing nature of the event and parallel reporting of the same, thus they have a very short span of life. The ease and low cost of online content creation and sharing have changed the traditional rules of competition for public attention. News sources now concentrate a large portion of attention on online mediums where they can disseminate their news effectively and to a large population. Due to the time-sensitive post aspect and intense competition for attention in the socially connected digital platform, accurately estimating the extent to which a news article will spread on the web is extremely valuable to journalists, content providers, advertisers and news recommendation systems. However, predicting the online popularity of online news articles is a challenging task. First, context outside the web is often not readily accessible and elements such as local and geographical conditions and various circumstances that affect the population to make this prediction extremely difficult. Furthermore, network properties such as the structure of social networks that are propagating the news, influence variations among members and interplay between different sections of the web add other layers of complexity to this problem. Most significantly, intuition suggests that content of an article must play a significant role in its popularity. Content that resonates with most of readers such as a major worldwide event can be expected to garner wide attention while specific content relevant only to a few may not be as successful. Content that is up-to-date and highlights all aspect of that article.

The news data for our study has been collected from News Aggregator Dataset from Kaggle. To generate features and classify the articles, we have used Multinomial Naive Bayes. To remove redundant information, we perform specific topic-wise clustering in a certain timeframe. For each cluster, we analyze the contents of new articles and use those for prediction of the popularity prior to publishing. Our work shall also help content writers to remove irrelevant, outdated, trivial and redundant content.

II. BUSINESS

♦ **Content Caching and Traffic Management**There is a hidden cost to publishing content, the cost to review and maintain the content. The millions of articles also affect the usability and maintainability of the site. In the long run, it is necessary to tackle redundant, outdated and trivial content which has been cursing the site.

♦ **Advertising** This work can find its application in content-based advertisement. alongside news pieces. It will optimize ad-placement logistics and revenues.

♦ **News Aggregation** With our current event driven clusters knowledge base, we predict the popularity of written articles to be published in that

Heart Attack Prediction Using Deep Learning

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Abstract - *Cardiovascular disease is one of the most heinous disease, especially the silent heart attack, which attacks a person so abruptly that there's no time to get it treated and such disease is very difficult to be diagnosed. The lack of specialist doctors and increase in wrong diagnosed cases has necessitated the need for building an efficient heart disease detection system. Various medical data mining and machine learning techniques are being implemented to extract the valuable information regarding the heart disease prediction. Yet, the accuracy of the desired results are not satisfactory. This paper proposes a heart attack prediction system using Deep learning techniques, specifically Recurrent Neural Network to predict the likely possibilities of heart related diseases of the patient. Recurrent Neural Network is a very powerful classification algorithm that makes use of Deep Learning approach in Artificial Neural Network. . The paper discusses in detail the major modules of the system along with the related theory. The proposed model incorporates deep learning and data mining to provide the accurate results with minimum errors. This paper provides a direction and precedent for the development of a new breed of heart attack prediction platform.*

Keywords: Heart Attack Prediction System, Data Mining, Artificial Neural Network, Recurrent Neural Network, Gated Recurrent Unit.

1. INTRODUCTION

Cardiovascular diseases are one of the highest flying diseases of the modern world. According to a survey, about more than 17.7 million deaths occur all across the world annually due to heart diseases[1]. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke[2]. Heart Attacks are one of the most deadly diseases which can knock one down at any point of time without any invitation and silent heart attacks are somethingwhich most doctors are not able to predict. The lack of specialists and increasing wrong diagnosed cases have necessitated the need for building an efficient cardiovascular disease prediction system. This has led to research anddevelopment of new medical data mining techniques and various machine learning techniques. The main objective of this work is to identify the key patterns and features from the medical data using the classification algorithms and then to select the most relevant attributes for silent heart attack diagnosis. The use of Recurrent Neural Network will further enhance the accuracy of the results. While the implementation of such a system is not unprecedented, the existing systems have drawbacks and do not aim at finding out the possibilities of silent heart attacks. This paper aims to address these and propose implementation of innovative features to develop a more comprehensive system.

2. LITERATURE REVIEW

Author	Purpose	Techniques used	Tool	Accuracy
M.A. Nishara Banu, B Gomathy	This system is used to predict the heart attack and also discussed various uses of various data mining algorithm for disease prediction.	C4.5 MAFIA K-Means clustering	Weka	89%
Aqueel Ahmed Shaikh Abdul Hannan	classification techniques in data mining and performance of classification among them	SVM Decision tree	R tool	91%
Rashedur M Rahman Farhana Afroz	Comparison of different data mining for diabetes diagnosis	Neural Network	Weka	85.83%
Nidhi Batla Kiran Jyoti	Analysis of Heart Disease Prediction using Different Data Mining Techniques	Naive Bayes Neural Network	Weka 3.6.6	96%

Table 1 - Various ML techniques used for heart disease prediction

3. PRESENT SYSTEM

Present systems used for prediction of heart attack are failing to meet the desired accuracy in the results. As seen in the literature survey, the machine learning techniques used are pushing the accuracy till a certain limit. Moreover, the issue with the present heart attack prediction system is the uses of attributes. The attributes to be selected for the prediction of heart attack are the conventional ones and thus the results are generating wrong results many-a-times. The proposed model aims to extract the proper attributes from the datasets which will enhance the precision of the prediction. It will also provide the users with proper diagnosis so that the user understands the problem well without much difficulty.

4. PROPOSED HEART DISEASE PREDICTION SYSTEM

The project sets itself apart by harnessing the powers of both Deep learning and data mining. The paper proposes a system, with a strong prediction algorithm, which implements powerful classification steps with a comprehensive report generation module. The project aims to implement a self-learning protocol such that the past inputs of the disease outcomes determine the future possibilities of the heart disease to a particular user. The proposed model makes use of strong preprocessing tools so that the classification and prediction do not show any errors relating to the dataset. A huge no. of training sets will be used to make the prediction more and more accurate. Not only does the datasets but also the attributes to be used are selected taking into consideration the various important parameters and attributes.

SSL Certificates using Block Chain Technology

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Abstract— The X.509 Public Key Infrastructure is centralized, weighing trust on single entity - Certificate Authority. A decentralized public key infrastructure for issuing SSL certificates is needed to overcome the flaws in the current X.509 PKI, which can help remove a single point of failure and in early detection of rogue certificates. Certificates will be signed by making a transaction. Domain owner will put up certificate along with signatures by trusted entities on their server, and clients will verify the integrity of this certificate that they receive by querying the smart contract on block chain.

Key words: X.509, PGP, PKI, Certificate Authority, Ethereum, Blockchain, Smart Contract, IPFS

I. INTRODUCTION

There are around 1200 Certification Authorities (CA) and the security of Internet relies on the least trustworthy of them. Public Key Infrastructure is often considered as Achilles Heel internet. Our current PKI leaves our communication vulnerable to Man in the Middle Attacks (MITM) giving a false sense of security. Security can be broken by spoofing DNS and compromising Certificate Authorities, both of which are, although very difficult, but possible and has been done various times in past by malicious hackers, government or intelligence agencies either by infiltrating networks or using backdoors. A breached CA can sign malwares, making it appear as an authentic software. As years went by, authorities/individuals in power have abused their power to stay in power. ICANN, created by the American government, serves as the backbone of the Internet having ownership of root dns servers. Trust is disrupted. Instead of fixing and patching the loopholes again and again, a new infrastructure is needed. The future of Internet IS decentralized and open.

Pretty Good Privacy's web-of-trust model provided mechanisms to exploit the trust between different parties, however not specifying how trust should be established in the first place. Because of this there is slow adoption of PGP. What we aim to do is adapting PGP style web-of-trust backed by smart contracts to manage – publishing, signing, revoking keys – removing weight of trust from a single entity in the PKI at the same time increasing overall trust among the entities.

II. EXISTING SYSTEMS

A. Certificate Transparency

After the Diginotar hack, Google came up with a mechanism [22][23] to detect fraudulent certificates being issued. Its working describes a public ledger, in which all the certificates issued to all the domains are present, accessible to users and the domain name owners. Monitoring and auditing of certificates can alert domain name owners (at the earliest) when a certificate is issued on their name. The difference between this and blockchain based solution is that Public ledger here is present on a central log server, means there will be very few of them (every CA will be expected to have log server up, however anyone can setup and run their own). CT can be implemented on blockchain, but CT does not prevent the attacks it just helps in early detection. Much more can be done if blockchain is used to change the PKI.

B. Certificate Pinning

"Certificate pinning is a process of associating a host with its expected X.509 certificate or public key. Once a certificate or public key is known or seen for a host, the certificate or public key is associated or 'pinned' to the host. If more than one certificate or public key is acceptable, then the program holds a pinset. In this case, the advertised identity must match one of the elements in the pinset. This utility is enabled by default in most of the browsers. The only problem with certificate pinning is that when the certificate will be obtained from the host for the first time before it gets pinned it will be vulnerable to MITM attack. One walkaround for this is browsers having embedded certificates for websites.

C. DNSSEC Dane

In 2014 it was found that emails to be send through Yahoo!, Hotmail, Gmail were being routed through rogue mail servers. DNSSEC was introduced to overcome these flaws in DNS. DNSSEC protects the query to Domain Name Servers by using digital signatures. It should be noted that it does not encrypt information just helps in validation using signatures. DNSSEC incorporates a chain of digital signatures into the hierarchy with each level owning its own signature generating keys. This means that for a domain name like www.example.com each DNS resolver must sign the key of the one below it along the way. Each DNS entity will sign its child's public key. Root zone will sign .com's public key, .com will sign example.com's public key. DANE (DNS-based Authentication of Named Entities) makes use of DNSSEC for secure communication between intended domain's server and clients by enabling administrator of a domain name to certify the keys used in that domain's TLS clients or servers by storing them in the DNS. DANE is backward compatible and will remove the need of CAs.

D. Convergence

Convergence was designed to replace Certificating Authority with Notaries. Just like with a CA, client can choose to trust various Notaries. In current PKI a SSL certificate is signed by one CA, with convergence when client will be presented a SSL certificate from a server, it will check with multiple notaries whether they vouch for the certificate or not. From the result, the client can decide whether to trust the server or not. Major advantage of convergence over existing PKI is - when a CA is compromised and its certificate is revoked, all the

Recurrent Neural Network and its Various Architecture Types

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Abstract-Recurrent neural network are network with dynamic capabilities to generate and process temporal information. Recurrent neural network are network can deep learn the input with its various architecture and identify outputs. LSTM network model was the first RNN with greatest achievement in pattern recognition contest in 2014. RNN can be used in its various architecture forms depending on the needs. Here we provide brief summary of various RNN networks up to now with Why? How? When? to use this network. Different architecture showed that recurrent neural network is mostly network with feed -forward and if want to store some information fed-back

Keywords-Recurrent neural Network, RNN, LSTM, NTM, Neural.

I. INTRODUCTION

RESULTS OF IMPLEMENTING HYBRID CAT USING IRT AND NAÏVE BAYES

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Abstract: *With the rapid research happening in the field of education and testing many systems implementing the latest techniques like Item response theory and machine learning have been conceived. In this paper we will look at implementation of a system that aims at employing different fields of research to develop a comprehensive testing platform. The system sets itself apart by attempting to be self sufficient such that it requires little or no human intervention required. This is achieved through automatic question acquisition and classification through a community run forum and a dynamic database that automatically transforms itself in accordance with the trends in the test takers responses. It is based on Item response theory to get item characteristic classification for the question sets that allows foran efficient test generator that can effectively test users across a larger section on latent scale. It also provides a comprehensive result generation that informs the examinee about the various patterns in test thus allowing him to better prepare.*

Keywords: Item Response Model · Naive Bayes Model · CAT (Computer Adaptive Test) · 2 - Parameter Model · Recommendation System.

I. INTRODUCTION

Many researchers and institutions have endeavored to provide advanced testing systems and platforms for informed learning. These systems while efficient suffer from drawbacks like they are difficult to maintain and require regular maintenance. They are often vulnerable to questions with outdated effectiveness i.e. while the questions are good at testing the targeted trait, over time these questions become known and their effectiveness is reduced. The proposed model in this paper tackles these problems while also providing the testing capabilities of other implemented system without any compromise. It also incorporates a comprehensive report generator [1] that analysis patterns of the examinee along with a comparative study against the top performers. The system is divided into the major modules namely the database manipulator module, the test module and the report module. The working of these modules will be explored further in the paper.

II. PROPOSED SYSTEM

The task separates itself by using both machine learning and IRT [2]. The paper proposes a framework, with an advancing database, which actualizes effective testing and scaling hypothesis while also implementing a complete report generator module. The undertaking intends to actualize a group run discussion that is utilized to populate the database where the inquiries are progressively scored. The proposed show gives a percentile score as well as an inside out analysisof the performance. It recognizes the patterns in the performance of the examinee thus providing an insight into how the examinee can improve his performance.

Actualizing of said system meets the objective of building up a framework with increased accuracy of estimating the learner's true ability while tending to the disadvantages of the current framework
The proposed system can be broadly divided into three main modules.

   a) Database manipulator.
   b) Adaptive test and report generator.
   c) Forum.

Firstly, the forum module that employs the Bayes Model of classification. This module will be used to populate the database after correct classification of the questions picked from the forum.
Furthermore, we have the database control module, this module is in charge of the dynamic scaling of the inquiries in the database in light of their discrimination and difficulty. This scaling depends on the information about the response of various examinees on that inquiry. This information contains the quantity of right reactions recorded and the normal time to accomplish the said reactions.
The final module is the actual test that the examinee takes, this employs Item Response Theory Model and adaptive test principles to rate tested trait of the examinee and generate a comprehensive performance report.

Review on IDS IN Wireless Network-MANET

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Abstract : Mobile ad-hoc network (MANET) wireless network used to transfer information from source to destination without using wire . Now a day's wireless networks are tremendously used all around because there is no need of fixed infrastructure to communicate. To establishthe network need of transmitter & receiver and the processorbattery power is also major concern. Applications of MANET in many real time applications like military surveillance, disaster management, air pollution monitoring etc. Due to open access network these network are more vulnerable to different types of attacks in MANET. Challenge is to focus on security of mobile ad-hoc network. . There are different types of attacks occurs in wireless network .Gray-hole attack, black-hole attack, wormhole attack , DOS attack, man in middle attack the major threats in the mobile ad-hoc network. In gray-hole attack packetsare selectively dropped by attacker & confidential information not transmitted to receiver. This research paper on finding the grayhole attack in MANET using AODV routing protocol.

Keywords: MANET, AODV, Black-hole-attack, Gray-hole Attack

I .Introduction

In the next generation of wireless communication systems, there will be a need for the rapid deployment of independent mobile users. Significant examples include establishing survivable, efficient, dynamic communication for emergency/rescue operations, disaster relief efforts, and military networks. Such network scenarios cannot rely on centralized and organized connectivity, and can be conceived as applications of Mobile Ad Hoc Networks [1]. A MANET [2] is an autonomous collection of mobile users that communicate over relatively bandwidth constrained wireless links. Since the nodes are mobile, the network topology may change rapidly and unpredictably over time. The network is decentralized, where all network activity including discovering the topology and delivering messages must beexecuted by the nodes themselves, i.e., routing functionality will be incorporated into mobile nodes. The set of applications for MANETs is diverse, ranging from small, static networks that are constrained by power sources, to large-scale, mobile, highly dynamic networks. The design of network protocols forthese networks is a complex issue. Regardless of the application, MANETs need efficient distributed algorithms to determine network organization, link scheduling, and routing. However, determining viable routing paths and delivering messages in a decentralized environment where network topology fluctuates is not a well-defined problem. While the shortest path (based on a given cost function) from a source to a destination in a static network is usually the optimal route, this idea is not easily extended to MANETs. Factors such as variable wireless link quality, propagation path loss, fading, multiuser interference, power expended, and topological changes, become relevant issues [2]. The network should be able to adaptively alter the routing paths to alleviate any of these effects. Moreover, in a military environment, preservation of security, latency, reliability, intentional jamming, and recovery from failure are significant concerns. Military networks are designed to maintain a low probabilityof intercept and/or a low probability of detection. Hence, nodes prefer to radiate as little power as necessary and transmit as infrequently as possible, thus decreasing the probability of detection or interception. Types of different attacks in MANETS are Passive & Active attacks.

Framework for Dynamic Resource Allocation and Efficient Scheduling strategies to enable Cloud for HPC platforms

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Abstract - *Resource Scheduling and allocation is extremely important issue in cloud computing. Any computation is applied once there's ample or proportionate resources obtainable. Services square measure provided to the shoppers or finish users with the correct analysis of resources. Infrastructure as a service in cloud grabs a lot of attention in Cloud computing. To utilize resources a lot of with efficiency Associate in Nursing optimized programming rule is employed to deal with cloud programming issues. By deploying virtual machines in acceptable locations to boost the speed of locating best allocation methodology that intern allow most utilization of resources obtainable. The programming resources to beat unbalance in assignment drawback, during this parallel genetic rule idea is employed that is far quicker than ancient genetic rule Cloud computing plays an important role may be a model for sanctionative omnipresent network access to a shared pool of configurable computing resources. Any cloud provides services chiefly 3 ways code as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS).*

Key Words: **Cloud computing; Resource Scheduling; VRaaS (virtual resource as a service); VMware; Parallel genetic.**

1. INTRODUCTION

The cloud computing has nice potential of providing sturdy procedure power to the society at reduced value. The dynamic resource programming model for a public cloud that has varied nodes with distributed computing environments with many alternative geographic locations. To be competitive, firms should minimize efficiencies and maximize productivity. In producing, productivity is inherently joined to however well you'll optimize the resources you've got, cut back waste and increase potency. Finding the most effective thanks to maximize potency during a producing method is extraordinarily complicated. Even on straightforward comes, there square measure multiple inputs, multiple steps, several constraints and restricted. generally a resource affected programming drawback consists of: a group of jobs that has got to be dead, finite set of resources which will be accustomed complete every job, related to set of constraints that has got to be happy. Constraints essentially of 2 sorts in Temporal Constraints the time window to complete the task, Procedural Constraints is that the order every task should be completed and Resource Constraints is that the resource

obtainable with set of objectives to guage the programming performance. Clouds is accustomed give on-demand capability as a utility, though the belief of this concept will disagree among numerous cloud suppliers, the foremost versatile approach is that the provisioning of virtualized resources as a service (VRaaS). Cloud computing emerges as a brand new computing paradigm that aims to produce reliable, bespoke and QoS (Quality of Service) bonded computing dynamic environments for end-users. Cloud computing is that the delivery of computing as a service instead of a product, whereby shared resources, code and knowledge square measure provided to users over the network.

1.1 Connected Work: -: -

All such systems have a typical goal like fault tolerance and parallel execution of tasks and that they square measure being employed in several fields. Open supply version of MapReduce i.e. Hadoop or the MapReduce were designed to run jobs in parallel in value effective manner victimization artifact servers. For simplicity Associate in Nursing example framework is MapReduce. Once job is given to that, it mechanically takes care of dividing the given job into tasks and spreading them across the obtainable servers. There square measure 2 programs concerned specifically Map and cut back for specific practicality. There square measure several alternative programs that coordinate with the roles of MapReduce nature. MapReduce is meant to run information analysis jobs on an oversized quantity of knowledge, that is predicted to be hold on across an oversized set of share-nothing artifact servers. MapReduce is highlighted by its simplicity: Once a user has work his program into the specified map and cut back pattern, the execution framework takes care of ripping the work into subtasks, distributing and execution them. One MapReduce job invariably consists of a definite map and cut back program. MapReduce has been clearly designed for big static clusters. Recently there was ton of analysis went on parallel processing and its implications and potentialities. Several systems came into existence for process MTC applications wherever multiprocessing of knowledge is crucial.

1.2 Challenges and Opportunities

They contemplate the amount of obtainable machines to be constant, particularly once programming the process jobs execution. Whereas IaaS clouds will actually be accustomed

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Adaptive routing based on predictive reinforcement learning

Rahul Desai ✉ & B. P. Patil

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Abstract

In this paper, optimized reinforcement learning-based adaptive network routing is investigated. Shortest path routing is most suitable network routing algorithm for wired network but not suitable for any wireless network. In high traffic conditions, shortest path will always select the shortest path (in terms of number of hops)

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Dual Reinforcement Q Routing for Ad Hoc Networks

Rahul M Desai, B P Patil

Abstract

Ad Hoc Networks are infrastructure less network in which nodes are connected by Multi-hop wireless links. Each node is acting as a router as it supports distributed routing. Routing challenges occurs as there are frequent path breaks due to the mobility. Various application domains include military applications, emergency search and rescue operations and collaborative computing. The existing protocols used are divided into proactive and on demand routing protocols. The various new routing algorithms are also designed to optimize the performance of a network in terms of various performance parameters. Dual reinforcement routing is learning based approach used for routing. This paper describes the implementation, mathematical evaluation and judging the performance of a network and analyze it to find the performance of a network.

Keywords

DSDV, OLSR, AOMDV, AODV, DSR, Ad Hoc Network, MANET, Q Routing, CQ Routing, CDRQ Routing

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Routing Protocols for Mobile Ad Hoc Network - A Survey and Analysis

Rahul M Desai, B P Patil, Davinder Pal Sharma

Abstract

Ad hoc networks are mobile wireless networks where each node is acting as a router. The existing routing protocols such as Destination sequences distance vector, Optimized list state routing protocols, Ad hoc on demand routing protocol, Ad hoc on demand multipath routing protocol, Dynamic source routing are optimized versions of distance vector or link state routing protocols. In this paper, existing protocols such as DSDV, AODV, AOMDV, OLSR and DSR are analyzed on 50 nodes Mobile Ad Hoc network with random mobility. Packet delivery ratio, delay, control overhead and throughput parameters are used for performance analysis.

Keywords

DSDV, OLSR, AOMDV, AODV, DSR, Ad Hoc Network, MANET

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Learning Based Route Management in Mobile Ad-Hoc Networks

Rahul M Desai, B P Patil, Davinder Pal Sharma

Abstract

Ad hoc networks are mobile wireless networks where each node is acting as a router. The existing routing protocols such as Destination sequences distance vector, Optimized list state routing protocols, Ad hoc on demand routing protocol, dynamic source routing are optimized versions of distance vector or link state routing protocols. Reinforcement Learning is new method evolved recently which is learning from interaction with an environment. Q Learning which is based on Reinforcement learning that learns from the delayed reinforcements and becomes more popular in areas of networking. Q Learning is applied to the routing algorithms where the routing tables in the distance vector algorithms are replaced by the estimation tables called as Q values. These Q values are based on the link delay. In this paper, various optimization techniques over Q routing are described in detail with their algorithms.

Keywords

Q Routing, Reinforcement, CQ routing, DRQ routing, CDRQ routing, DSR, AODV, DSDV

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Leaf Disease Diagnosis using Online and Batch Backpropagation neural network

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Abstract—Productivity of the crops is affected due to diseases. Traditional disease diagnosis system is very time consuming in which pathologist carried out experimentation in the laboratory. Hence it is needed to produce the system which diagnosis the disease accurately and fast with the help of the technology. Identifying disease of crops in its early stage is a major challenge in front of researchers. Many machine learning algorithms and image processing techniques are applied to efficiently identify the disease based on the symptoms that appeared on the leaves. In this paper, the infected leaf is segmented using the Kmeans clustering algorithm and further the 12 texture features are extracted from the segmented image. The backpropagation (BP) algorithm is used for identifying the disease. Here two versions of the backpropagation i.e. online BP and batch BP are used. The Pomegranate infected leaf image database is used for the experimentation purpose. It is observed that online BP performance is better as compared to the batch BP.

Keywords—Leaf disease, Agriculture,Backpropagation neural network

Springer Link

Experimental Study of Heat Transfer Enhancements from Array of Alternate Rectangular Dwarf Fins at Different Inclinations

Umesh Vandeorao Awasarmol ✉ & Ashok T. Pise

Abstract

The main objective of this experimental work is to investigate and compare heat transfer enhancement of alternate dwarf fin array at different angles of inclination. In this study, the steady state heat transfer from the full length fin arrays and alternate dwarf fin arrays are

Maximizing Throughput using Adaptive Routing Based on Reinforcement Learning

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---ABSTRACT---
In this paper, prioritized sweeping confidence based dual reinforcement learning based adaptive routing is studied. Routing is an emerging research area in wireless networks and needs more research due to emerging technologies such as wireless sensor network, ad hoc networks and network on chip. In addition, mobile ad hoc network suffers from various network issues such as dynamicity, mobility, data packets delay, high dropping ratio, large routing overhead, less throughput and so on. Conventional routing protocols based on distance vector or link state routing is not much suitable for mobile ad hoc network. All existing conventional routing protocols are based on shortest path routing, where the route having minimum number of hops is selected. Shortest path routing is non-adaptive routing algorithm that does not take care of traffic present on some popular routes of the network. In high traffic networks, route selection decision must be taken in real time and packets must be diverted on some alternate routes. In Prioritized sweeping method, optimization is carried out over confidence based dual reinforcement routing on mobile ad hoc network and path is selected based on the actual traffic present on the network at real time. Thus they guarantee the least delivery time to reach the packets to the destination. Analysis is done on 50 nodes MANET with random mobility and 50 nodes fixed grid network. Throughput is used to judge the performance of network. Analysis is done by varying the interval between the successive packets.

Keywords – DSDV, AODV, DSR, Q Routing, CBQ Routing, DRQ Routing, CDRQ Routing

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A Joint Channel Estimation and Data Detection for a MIMO Wireless Communication System via Sphere Decoding

January 2017 · Journal of Information Processing Systems 13 (4):1029-1042

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Hybrid Compression Technique Using Linear Predictive Coding for Electrocardiogram Signals

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ABSTRACT

Linear Predictive Coding (LPC) is used for analysis and compression of speech signals. Whereas Huffman coding is used forElectrocardiogram (ECG) signal compression. This paper presents a hybrid compression technique for ECG signal using modifiedHuffman encoding andLPC.The aim of this paper is to apply the linear prediction coding and modified Huffman coding for analysis, compression and prediction of ECG signals. The ECG signal is transformed through discrete wavelet transform. MIT-BIH database is used for testing the compression algorithm. The performance measure used to validate the results are the Compression ratio (CR) and Percent Root mean square difference (PRD).The improved CR and PRD obtained in this research prove the quality of the reconstructed signal.

Key words
Huffman encoding, Linear Predictive Coding, Compression

1. INTRODUCTION

ECG gives clear indication about heart diseases and arrhythmias. It is necessary to monitor and store the ECG signal of subjects continuously for diagnosis purpose. Due to this, the data storage size keeps on increasing. In such situations, it is necessary to compress the ECG signal for storage and transmission. The important factor

ECG Signal Compression using Parallel and Cascade method for QRS complex, Dr Surekha K S, Dr B P patil

ECG Signal Compression using Parallel and Cascade Method for QRS Complex

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Abstract

Objectives: In this paper we present. compression of QRS complex of ECG signal by hybrid technique. The methodology employs both cascade and parallel combination of DCT and DWT. **Methods/Statistical Analysis:** QRS complex is an important part of ECG signal used by doctors for diagnosis purpose. The transmission of QRS complex requires less memory and complexity as compared to the complete ECG signal. The methodology employs both cascade and parallel combination of DCT and DWT. The performance measures such as PRD (Percent Root mean square Difference) and CR (Compression Ratio) are used to validate the results. **Findings:** MIT-BIH ECG database is used for the study. The threshold based technique is implemented on both cascade and parallel system. The cascade technique shows improved CR and proved to be better than the parallel sytem in terms of storage and transmission. The lower value of PRD also demonstrates the improved quality of the reconstructed signal in the cascade and parallel system. **Application/Improvements:** The cascade system with a high CR requires less memory. Both the cascde and parallel system show good reconstruction quality with the low PRD.

Insulation Assessment of Oil Impregnated Paper Condenser Bushings using Dielectric Frequency Response Technique

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Abstract

Objectives: Investigation of insulation to judge the health of the condenser bushing with different techniques has been the area of interest for the researchers in recent past. Power transformers and their bushings are manufactured with oil impregnated paper insulation but their insulation integrity is comprised due to absorbed, residual or liberated moisture/ water which leads to further deterioration and catastrophic failure. **Methods:** Conventional measurement technique taken at rated power frequency only gives relative indication of specific dielectric properties and health of the condenser bushings. This article introduces a new approach for insulation assessment of the condenser bushings where OIP insulation as a key component has been investigated in a wide frequency response spectrum and to confirm the validity of this approach, measurements were taken on several condenser bushings of same type and age. **Findings:** The advance technique is a non-destructive method which evaluates the water concentration of the test object. The resulting curve is highly determined by the behavior of solid insulation and it is also sensitive to oil conductivity and insulation geometry of the bushing. Furthermore, the interpretation scheme related to dielectric response is explained. **Applications:** The signatures achieved helps in reliable data analysis and can be used in qualitative comparisons of bushings which compliments the available quality assurance techniques in the factory. This approach can also be used for frequent monitoring and effective moisture management at site.

Keywords: Condenser Bushing, Dielectric Spectroscopy, Insulation Assessment, Oil and Paper Insulation

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Blind Channel Estimation Using Novel Independent Component Analysis with Pulse Shaping for Interference Cancellation

- Renuka Bhandari[3,4] &
- Sangeeta Jadhav[4]

- Chapter
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Abstract

Now days with the growing exposure of wireless communications, there is more focus on achieving the spectral efficiency and low bit rate errors (BER). This can be basically achieved by Space Time Frequency based Multiple Input Multiple Output (MIMO)-OFDM wireless systems. The efficient channel estimation method plays important role in optimizing the performance of spectral efficiency and BER. There are different types of MIMO-OFDM channel estimation methods. In this paper, we focused on designing efficient blind channel estimation method for MIMO-OFDM. Recently there has been increasing research interest in designing the blind channel based estimation methods. There are number of blind channel estimation methods introduced so far, however none of them effectively addressed the problem of Inter Symbol Interference (ISI). ISI may have worst impact on performance of channel estimation methods if there are not addressed by channel estimation techniques. In this paper we are designing the novel blind channel estimation approach using Independent Component Analysis (ICA) with both ISI cancellation and blind interference cancellation. This method is named as Hybrid ICA (HICA). HICA algorithm use the HOS (higher order statistical) approach and pulse shaping in order to minimize the blind interference and ISI effects. Simulation results shows that HICA is outperforming the existing channel estimation methods in terms of BER and MSE.

Keywords

- MIMO-OFDM
- Channel estimation

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A Novel Modulation Scheme of 8x8 MIMO in Industry 4.0

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ABSTRACT

A key component in the usage of Industry 4.0 arrangements is the up and coming age of system network, LTE/LTE advanced today, and 5G, later on. Industry 4.0 is conveying private LTE arranges today, as they trust it will give them an upper hand and a solid head start when 5G opens up. LTE uses multiple input multiple output (MIMO), a promising technique to accomplish the necessary data rate. This article presents consequences of 8x8 MIMO framework in fading channel utilizing V-BLAST by means of zero-forcing (ZF) with standard ZF. The relative investigation in the fading channel on account of symbol error proves V-BLAST by means of ZF has predominant execution than standard ZF finder. In addition to this, in order to support adaptive modulation, various M-QAM

graph, binary matroids, es-splitting operation

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Controlled release of Doxycycline from gum acacia/poly(sodium acrylate) microparticles for oral drug delivery

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Wavelets As Minimizers Of Uncertainty From The Kinematical Group

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Department of Mathematics, University of Pune.

Abstract: In this paper we propose a method of obtaining a family of wavelets. The members of the family are tagged by the time parameter. We obtain these wavelets as minimizers of an uncertainty principle. The wavelets are directional in nature. As the family depends on the time parameter, each value of time parameter associates with it a wavelet and because of this scenario the method suggests utility of the idea in motion tracking, video analysis and other such situations.

AMS subject classification: 42C40.
Keywords: Kinematical Group, Uncertainty Principle, Wavelets, Minimizers, Unitary Representation, Commutation Relations, Admissibility Conditions, Kinematical Wavelets.

spatiotemporal wavelets in the field of geophysics to analyse multiscale phenomena in ocean currents. The authors in [14] attempt to understand brain function with reported success using spatiotemporal wavelet transform as compared to other techniques.

In this paper we study the spatiotemporal wavelets that arise from a unitary representation of the kinematical groups in dimensions one to four.

We present here a brief note on the kinematical group in n-dimensions. We refer to [1], (Chapter 15, page 342). The wavelets traditionally have been used for analysing static signals or images. To analyse moving objects, changing images or signals one considers $s \in L^2(\mathbb{R}^{n+1}, d^n x dt)$, the space of time dependent signals of finite energy. The oper-