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V. Kamakshi Prasad
Jiacun Wang
K. T. V. Reddy *Editors*

Soft Computing and Signal Processing

Proceedings of 2nd ICSCSP 2019

 Springer

V. Sivakumar Reddy · V. Kamakshi Prasad ·
Jiacun Wang · K. T. V. Reddy
Editors

Soft Computing and Signal Processing

Proceedings of 2nd ICSCSP 2019

 Springer

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Extraction of Key Frames Using Rough Set Theory for Video Retrieval



G. S. Naveen Kumar and V. S. K. Reddy

Abstract A key frame is an illustrative frame consisting of the entire shot data. It is used to analyze, classify, index and recover video. The present algorithms produce appropriate representative frames and also produce irrelevant representative frames. Some of the algorithms are not able to generate exact key frames for entire shot. To overcome this problem, we proposed a better and efficient scheme based on DC coefficients and rough sets to achieve better results when compared to the rest. This proposed algorithm extracts the exact key frames since it eliminates the distinctness of the selection of key frames. This algorithm is applicable only for compacted MPEG videos. So decoding is not necessary. Thus, the performance of the proposed algorithm exhibits its efficacy in results.

Keywords DC coefficients · Rough set theory · Representative frame · Video retrieval

1 Introduction

There has been an uprising in instinctive media with mechanical advancement. Consequently, video recording has reached out by a wide edge. Video recovery from an enormous database is bumbling by the present substance-based solicitation since a great deal of human exertion is fused and the recovery benefit is desolate too. In setting on the present inconveniences [1], video recovery subject to video substance beats the present standard frameworks. Substance proposes confirmed video data, for example, video highlights. The demonstration of the Content-Based Video Retrieval (CBVR) relies on feature extraction [2] and close highlights arranging. Different calculations have been propounded to recover accounts from an enormous database [3]. In any case, they could not diminish the time-use and their effectiveness could

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A Comparative Discussion on Various Modern Video Retrieval Strategies



K. Mallikharjuna Lingam and V. S. K. Reddy

Abstract In the recent past, wide ranges of video retrieval processes were presented by different researchers. In order to boost the ease of access of video clip, keen applications, which have item removal, video purchasing, video clip healing and also fast perusing are performed with foundation demonstrating and also recovery summation. That is, both vital outline video reading and also explicit product recuperation reading can be performed on the very first video clip. Secondly, the techniques based on material matching for video access are evaluated. In view of these actualities, we provide a query by the criterion video clip recovery method, in this paper. We present a computation for comparability collaborating, to find the neighbourhood video clip set-ups with various sizes. In addition, the computation can find the similitude between an inquiry video clip and an item of another video clip group. Amid this treatment, a certainty price will be taken into consideration that makes the inexact similitude coordinating possible. The access methods based on info concept are additionally reviewed. In the recent years, a substantial arrangement of video documents is made and quickly sight, and also sound growth makes a brand-new examination aware preparing the world. Our proposed technique is in view of detailed theory. These structures consist of three essential components which integrate: shot border detection, ordered video clip synopsis, and submit and recover target video clip.

Keywords Video retrieval · Object detection · Content matching · Video matching · Video searching · Information theory

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Abstract

Adders form the basic building blocks of several signal processing applications. Power optimization is an important requirement of the design today. Several hybrid circuits using XOR–XNOR or XOR/XNOR are implemented using CMOS devices. In this paper, FinFET device based XOR/XNOR and simultaneous XOR–XNOR functions are proposed and implemented. The proposed circuits reduce the power consumption and delay. The FinFET full swing XOR–XNOR or XOR/XNOR gates are used to implement the full adder (FA) circuits. The circuits showcase better performance in power consumption. The experimental simulation was carried out in 32-nm CMOS and FinFET process technology. The proposed FinFET hybrid adder showed superior performance when compared to CMOS. Out of the six types of adders Hybrid Full Adder of 22 transistors FinFET circuit is 90% efficient than CMOS circuit.

Keywords

CMOS FinFET XOR XNOR Full adder Low power 32 nm

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Low Power, Less Leakage Operational Transconductance Amplifier (OTA) Circuit Using FinFET

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Examining Streaming Data on Twitter Hash Tags with Relevance to Social Problems



S. Shanthi, D. Sujatha, V. Chandrasekar, and S. Nagendra Prabhu

Abstract During the most recent years, usage of a variety of social networking sites, such as Twitter, Facebook, has been dramatically used by many. Due to these networking sites, an enormous volume of information is generated and there is an urge to investigate and process these data. At the present moment, most of the people accurately articulate their own opinions and views on a diverse of topics such as politics, movies, industries, etc. all the way through personal blog websites. Our paper will analyze the diverse posts of users who had expressed their opinions and views in Twitter and we try to extract the sentiment polarity as positive, negative and neutral. We are using R programming to bring out the sentiment analysis and analyze the data usually in the form of criticisms and reviews. We characterize the outcomes of sentiment analysis of Twitter statistics as positive, neutral and negative sentiments.

Keywords Sentiment analysis · Twitter · Maximum entropy · R programming

1 Introduction

Nowadays, everybody is interested in using social networking websites. The population needs to get satisfied with the various products and services which have been marketed by various companies. Remarks, comments, analysis and personal opinion of the diversified people play a very significant role in concluding whether the known population has been satisfied with the product and services provided by various

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Recognition of Botnet by Examining Link Failures in Cloud Network by Exhausting CANFES Classifier Approach



S. Nagendra Prabhu, D. Shanthi Saravanan, V. Chandrasekar,
and S. Shanthi

Abstract Consequently, verifying the cloud from the botnet is required for keeping the administrations from different assaults, for example, distributed denial of service (DDoS), spreading malware and hacking of private data. To identify botnet and furthermore to identify bot master from the cloud condition, by examining link failures in cloud network by exhausting CANFES classifier. The link failures between cloud server and client because of bots in cloud network. The probabilistic highlights of the bots and link gain are assessed on each port of the cloud framework. In view of this estimation, the connections between cloud server and client are broken down for the likelihood of disappointment and to recognize the bot master utilizing CANFES. The exhibition of the proposed framework is broke down as far as throughput, path loss and precision rate. The proposed system achieves 7623 bits/second as throughput, 17.04 dB as path loss and 94.6% of precision rate.

Keywords DDoS · CANFES classifier · Botnet · Throughput · Path loss

1 Introduction

These days the botnet is turning into the base of all cybercrime which is performed through the web. bot master utilize various techniques to contaminate a client gadget to make it bot (zombie) like drive by download, email and pilfered programming's are the most well-known method for assaults. As indicated by the past research, loads of the recognition methodologies have been proposed. Be that as it may, the greater part of them are centered around the disconnected identification of botnet; still we have to concentrate on constant location. As society turns out to be progressively

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Sentimental Analysis on Twitter Data Using Hadoop with Spring Web MVC



RaviKiran Ramaraju, G. Ravi, and Kondapally Madhavi

Abstract This paper addresses the sentiment analysis on Twitter data, i.e., obtaining user sentiments by classifying tweets according to their opinions positive, negative or neutral. This paper primarily consists of live stream data generation, process and visualization through GUI based application for the results. Output will be visualized through Google Charts. Opinion tweet results will be displayed in the form of pie charts. Twitter is an online microblogging on social-networking platform which allows users to express their ideas. It is a rapidly expanding service with over 555 million users, generating millions of tweets per day. We can obtain public sentiment through this data, it is crucial for many applications such as predicting political elections suppose public opinion on the prime minister and for obtaining product reviews of firms. The aim of this project is to find sentiments from the Twitter live streaming data using Apache Flume, Hadoop, and visualize the results in the web application.

Keywords Apache Hadoop · Flume · HDFS · Spring · Bootstrap · JQuery · Google chart · Maven · Twitter

1 Introduction

In this era with the invention of smart mobiles, there is a revolution in the usage of the internet and social media. Social media sites like Facebook, Twitter, or Whatsapp become very popular [1]. Irrespective of educational background now people are expressing their views on these social sites about the products they are purchasing,

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EQUIPMENT TEST LIFE CYCLE MANAGEMENT SYSTEM

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Abstract- In today's competitive market scenario, the equipments are compelled to market new technologies. And innovations as fast as possible and reduce time to market considerably to gain first mover advantage. The trend towards reduced lifecycles is causing substantial conflicts since the development period and the lifetime of a product is getting closer to one another. A delay in launching new equipment can severely affect the Amortization process. Thus, there is an Urgent need for optimization of the product development process and especially the Automotive Testing Process, as it constitutes a major portion of the development time. Currently, the equipment Testing Community is facing lot of challenges. The testing productivity is limited by inefficient tools and inconsistent processes. The existing legacy technologies are extremely difficult and costly to maintain and enhance. Also, the Automotive Regulatory bodies are coming up with strict regulations in the area of Safety, Environmental Protection and Product Quality. Due to increasing electronic content of the Automobiles and the complexity of Testing Equipment, there is an urgent need for standardization of the automation and the measuring systems. Also, the Databases for storing the test related information have lot of limitations and finally there is inconsistent information sharing between various groups involved in the product development process. The role based access control has one more challenge in the equipment life cycle process. The different type of users will do different type of tasks. Admin user has control for all the tasks. And test engineer has access for certain tasks. The system can define the lab, standard, taxation, purchase order, Invoicing, template, industry, Instrumentation, customer management, category, users and user management. And associate all those defining to equipment test in order to generate report. The current challenges are to storing above information and reposting test results into centralized system.

Index Terms- Equipment test life cycle management system, Manufacturing test life cycle management system, Automation of test life cycle management system, Product Testing Life Cycle.

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Toughness study of Borided, Borided and induction modified AISI 4340 steel

T Sivakumar¹, M Prince² and P Gopalakrishnan³

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In this study, pack boriding is done on AISI 4340 steel in steel containers for 2 hours at 950°C. Boriding

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T Sivakumar¹, M Prince² and P Gopalakrishnan³

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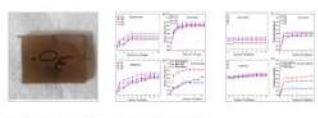
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Study of moisture absorption and its effect on erosion wear behavior of eggshell nanoparticulate epoxy composite

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- 1. Introduction
- 2. Literature review
- 3. Experimental procedures
- 4. Result and discussions
- 5. Conclusions

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Homogenized mixture (Ni-Al-hBN) plasma sprayed on mild steel by varying spray velocity

E. Gopinath^a, A. Sai Kantshka^a, K. Sai Tharun^b, Srikar, P.^a, Ajit Behara^b

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QUANDARIES DURING NUMERICAL ANALYSIS ON SHAPE MEMORY PRODUCT

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ABSTRACT

Shape memory alloy is a portion of smart materials. These materials have exclusive property of super elasticity / pseudo elasticity which helps in recovery of shape and strains result in resuming its structural property even from state of plastic deformation. Scientific study on these materials indulges to have growth in medical, aerospace and automotive industrial application. Substantial amount of research is available in the literature to study the properties of these materials with different parameters such as processing and compositions based. However, modeling of these parameters was never cited in the literature, hence motivation for the present work emphasizes to model these parameters as an adjustable coefficients that can be used to perform numerical analysis. The novelty of present work addresses one of important phenomena "strain recovery" and proposes an analytical model which extends the modeling of shape recovery.

KEYWORDS: Shape Memory Alloy (SMA), Nitinol, Shape Memory Actuator & Phase Diagram

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Mechanical Properties of Randomly oriented Carbon – Sansevieria Trifasciata Fiber Epoxy Composites.

Sandhya Rani Borukati, B. Durga Prasad, A. Ramesh

Abstract: This Research work explains the Mechanical properties of Flexural test, Tensile test, Impact test and SEM analysis of Sansevieria Trifasciata fiber (STF), Carbon fiber (CF) [1] hybrid polymer composites. The Hybrid Composite laminates were created with five different fiber % of STF (0%, 10%, 20%, 30% and 40%) and % of Carbon Fiber (100%, 90%, 80%, 70% and 60%). The manufacturing process was completed by hand layup technique. Mechanical properties of Hybrid Composite laminates were included to Tensile, Flexural and Impact testing. The SEM shows fiber debonding and de-lamination of fiber and resin can be observed. The explanation covers that Flexural, Tensile and Impact quality increases without affecting the extension of the Hybrid Composite with fiber extents

Keywords: Hybrid polymer composite, Carbon fiber, Sansevieria Trifasciata fiber (STF), Mechanical properties, and SEM analysis.

I. INTRODUCTION

The Carbon fiber [2] cross sectional area is 5 to 10 micrometers. The carbon fiber was made with carbon

preparation was depends on Matrix. In this working procedure, the matrix develops with LY 556, HY 951. The

hybrid composite specimen process includes 8 layers with epoxy and hardener. The thickness of specimen [4] is 3 mm. After complete the laminates working procedure, we have done the three different testing processes like tensile test, Compression test and Flexural test with ASTM standards. In flexural test [9], as per standards the specimen dimensions are 63X12X3. In impact test [10], the specimen dimension are 63.5X12.7X3. In Tensile test [8], the specimen dimensions are 165X13X3.

III. MATH

The percentage of carbon fiber and sansevieria trifasciata fiber % data was given table 1. The results and discussions for tensile strength, flexural strength and impact strength at 40%, 30%, 20%, 10% and 0% data was given in table 2, 3 & 4.

- Outline
- Abstract
- Keywords
- References

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Development and Charecterization of Natural Fiber /Carbon Fiber Reinforced Hybrid Composite Material

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Power Generation from Hydraulic Shock Absorber Using Piezoelectric Material



B. Jain A. R. Tony, M. S. Alphin, and V. Yeshwant

Abstract A lot of emphasis has been laid on harvesting energy from unconventional sources these days due to environmental concerns. Harvesting energy from vibrations is one of the most promising technologies in the present day scenario like the vibrations of tall buildings, long bridges, vehicle systems, railroads, ocean waves, and even human motions. For successful harnessing of this wasted energy, a piezoelectric transducer has been used. The analysis of suspension to find stiffness and deformation is done. Also, the force acting on the suspension over bumps is found which is used to calculate the voltage. The power obtained is further calculated and possible applications of this energy generated are also being mentioned. The objective is to harvest energy from the suspension system using PZT. Model of the shock absorber and a Simulink model of quarter car suspension. Evaluation of the changes in stiffness and deflection of the suspension would be done. A way of efficient conversion of the vibration to electric power by finding the best position to place the piezoelectric material. Finally, the force during a bump is found and hence the voltage induced in PZT. Thus, the power generated and designing a circuit to store the generated power in a battery is obtained.

Keywords Piezoelectric material · Simulink · Energy harvesting

1 Introduction

There has constantly been a lot of emphasis on the need for reduced energy consumption or energy harvesting in automobiles. There is also an increase in the amount of

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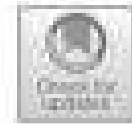
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Static Deformation Analysis with and Without of Piezo-electric Material Attachment in Hydraulic Suspension System



B. Jain A. R. Tony, M. S. Alphin, and Nishanth P. Shah

Abstract A lot of emphasis has been laid on harvesting energy from unconventional sources these days due to environmental concerns. Harvesting energy from vibrations is one of the most promising technologies in the present day scenario like the vibrations of tall buildings, long bridges, vehicle systems, railroads, ocean waves, and even human motions. For successful harnessing of this wasted energy a piezo-electric transducer has been used. The analysis of suspension to find stiffness and deformation is done. Hydraulic suspension system was modelled using SOLIDWORKS and static analysis was performed using ANSYS. The static analysis results were evaluated as deformation and Von-Mises stress with and without piezo-electric material.

Keywords Hydraulic suspension system · Piezo-electric material · Static deformation · Von-Mises stress

1 Introduction

The harvested energy from an automobile system is mainly obtained from the energy absorbed due to the vibration of a car on irregular roads that are being damped in order to have an ergonomic design for the passenger during his drive. Thus, its suspension system uses a dampener or a shock absorber to absorb the energy produced from the vibrations. But this energy harvested can be used to power the car or any of its associated devices. Piezo-electric material can be used to absorb these vibrations and convert it into a form of electrical energy that can be stored in a battery. The transduction mechanism such as the piezo-electric, electrostatic and

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Influence of Vibro-isolator Attachment for a Jackhammer to Reduce Vibration Discomfort



B. Jain A. R. Tony, M. S. Alphin, and Vishal Venkatesh

Abstract Jackhammers are widely used in the construction industry to break up rock, pavement and concrete. They are generally powered by compressed air, electric motors, or hydraulics and can generate a large force for drilling and demolition. However, while they are an efficient tool for this purpose, they also pose a serious danger to the worker, due to the vibrations transmitted. Prolonged exposure to these vibrations can cause ailments such as vibration white finger, Raynaud's disease and carpal tunnel syndrome (CTS). The objective of this research is to design and fabricate a vibro-isolator attachment to damp and absorb the range of harmful vibrations transmitted to the occupant. The attachment is clamped on top of the jackhammer and makes use of two helical springs in parallel to reduce the higher amplitude vibrations. Handles are provided above the springs for the user to grip the attachment and hence, the jackhammer. The new design, setup feels worker much less hand-arm vibration without reducing the downward drilling force of the jackhammer. Hence, the newly designed vibration isolation, attachment reduces the hand-arm vibration, and the jackhammer can be operated at full power without compromising on the health of the occupants.

Keywords Vibro-isolator · Jackhammer · Carpal tunnel syndrome · Design of springs

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