3.4.4.1: Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year wise during last five years

Index Page

S.No	Description	Page no.
1	2017 books and chapters in edited volumes/books published	2-27
2	2017 e-copies of books and chapters in edited volumes/books published	28-29

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" Effect of Amplitude Scintillations on the Tracking Error of IRNSS Receiver for Indoor Navigation Applications"

Effect of Amplitude Scintillations on the Tracking Error of IRNSS Receiver for Indoor Navigation Applications

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Abstract— Indoor navigation has become increasingly important for various applications such as emergency services and consumer devices. The performance of Indian Regional Navigation Satellite System (IRNSS) receiver degrades in indoor environment due to attenuation of signal levels in addition to ionospheric scintillations. For indoor navigation applications such as position finding in a multi-story building, the effect of scintillation may result in the loss of lock signal rather than reduced accuracy. The objective of this paper is to investigate the effect of ionospheric scintillations on IRNSS receiver performance for indoor navigation by estimating the receiver phase lock loop (PLL) and Delay locked loop (DLL) tracking error variance (jitter). Our initial results indicate that severe scintillation could cause loss of lock.

Keywords—DLL, Indoor position, Ionospheric scintillations, IRNSS, Jitter and PLL.

I. INTRODUCTION

Indoor navigation has become increasingly important for various applications such as emergency services and consumer devices [1]. Global Navigation Satellite System (GNSS) comprises several satellite systems that can be used to locate the geographic location of a user's receiver anywhere in the world. GNSS receivers, using the GPS, GLONASS, Galileo or Beidou system along with regional systems are used in many navigational applications. Recently, the Indian Regional Navigation Satellite System (IRNSS) has become operational and is undergoing field trials for various applications. The satellite constellation consists of 3 geostationary and 4 geosynchronous satellites and operates in L and S band signals. Position finding of a person/fire in an indoor environment such as inside a multi-story building is very important. The IRNSS in combination with Geophysical Information System (GIS) is expected to give a very good position information in indoor environment. But, the quality of the IRNSS signals severely degrades in the indoor environment due to attenuation such as 10 to 20dB introduced by the obstructions such as walls etc. In addition,

several errors including ionospheric scintillations will further limit the performance of GNSS/IRNSS receiver [2]. Ionospheric scintillations are random rapid variations in the intensity and phase of received signals resulting from plasma density irregularities in the ionosphere [3][4]. Amplitude scintillation directly affects the carrier to noise ratio (C/No), as well as the noise levels in code and phase measurements [5][6]. Amplitude scintillation can be sufficiently severe that the received IRNSS signal intensity from a given satellite drops below the receivers tracking threshold, causing loss of lock on that satellite, and hence the need to re-acquire the IRNSS signals [7]. Therefore, research into the performance of IRNSS receiver in signal-degraded indoor environments under ionospheric scintillation is required.

II. TRACKING ERROR VARIANCE AT OUTPUT OF PLL FOR L5 BAND IRNSS

The carrier phase tracking error variance is often considered as an indicator of receiver performance. In the evaluation of receiver performance, one of the important parameters is the tracking threshold point[8]. This corresponds to the value where the PLL stops working stably and loses the lock and is given as,

$$\sigma_{\phi e/lim}{}^2 = \left(\frac{\pi}{12}\right)^2 (rad)^2 \qquad (1)$$

Assuming no correlation between phase and amplitude scintillation, tracking error variance at the output of the PLL is expressed as,

$$\sigma_{\phi e}{}^2 = \sigma_{\phi S}{}^2 + \sigma_{\phi Th}{}^2 + \sigma_{\phi osc}{}^2 \qquad (2)$$

where $\sigma_{\phi S}{}^2$ is phase scintillation error component, $\sigma_{\phi Th}{}^2$ is the thermal noise component and $\sigma_{\phi osc}{}^2$ is the receiver oscillator noise. The receiver oscillator noise is assumed to have a standard deviation of 0.1 rad and it is ignored in this work. For the low latitude region like India, the values of $\sigma_{\phi S}{}^2$ are considerably low and well behaved [9].

Under normal ionosphere conditions thermal noise is the main factor causing tracking error. Under severe irregular ionospheric conditions, ionospheric scintillations become an

"Design, Implementation and Performance Comparison of different Branch Predictors on Pipelined-CPU"

Design, Implementation and Performance Comparison of different Branch Predictors on Pipelined-CPU

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Abstract— Branch predictors are implemented on pipelined CPUs having different types of instructions. Both unconditional and conditional branches are implemented utilizing different instruction set formats of the CPU. A basic pipelined CPU consists of three stages Fetch, Decode, and Execute. All the instructions are executed in parallel, hence every stage is busy with an instruction which saves the wastage of time and increases the performance. Hazards will occur because of Conditional branches in the pipeline which changes the sequential flow of execution. To overcome these hazards, the pipeline should be made empty and loaded with appropriate instruction which avoids the wastage of time. Hence Branch predictors are essential in CPUs as it saves the wastage of time by guessing the correct sequence of instruction as the conditional branches changes the sequence of instructions. Three types of Branch Predictors are implemented on pipelined CPUs separately which are simulated, synthesized and bit-files are generated using Xilinx ISE tool, the bit-files are later dumped on Xilinx SPARTAN-6 board and the results are analyzed using CHIPSCOPE.

Keywords— Branch predictors; pipeline; CPU; Xilinx ISE; Xilinx SPARTAN; CHIPSCOPE.

I. INTRODUCTION

A Central Processing Unit (CPU) is an essential hardware within any computer that executes all the instructions of a computer program by performing the basic logical, arithmetical and input/output operations of the system. The two vital segments of a CPU are the arithmetic logic unit (ALU), which performs arithmetic and logical operations, and the control unit (CU), which extracts instructions from the memory then decodes and executes them, calling on the ALU when necessary [1]. An Intel core i7 processor is shown in Fig.1.

Pipelining is an implementation technique in which multiple instructions are processed at same instance of time [3]. It is the process of executing the instruction in an overlapped manner to increase the rate of flow of instructions, hence, improving the speed of a processor and reducing the number of cycles required to execute an instruction. The execution of an instruction will be done in three stages Fetch, Decode, Execute at consecutive three clock cycles together known as execution cycle or instruction cycle [10]. In Instruction pipeline there is no waiting of next instruction, the first stage in pipeline fetches the instruction and buffers it while the second stage is free. The first stage passes the buffered instruction to decode stage, while the second instruction is fetched in to the first stage (Fetch stage). When the first and second instructions are in Execute and Decode stages, the third instruction will be fetched into the Fetch stage and then it is send to the next succeeding stage, this process repeats. Since every stage is busy, it saves the wastage of time and enhances the overall performance of the CPU.

Nowadays every processor is implemented with pipeline to improve its performance, but a problem arises when there is a conditional branch instruction in pipeline. Consider a JUMP on carry (JC) instruction which will be known only in execution stage leading to a hazard in the pipeline as it fetches the wrong instruction from the memory, thereby, taking extra cycles to execute the JUMP instruction [7]. So, to overcome this hazard a concept of Branch Prediction circuit with different algorithms has been implemented on CPUs to predict JUMP instruction in Fetch stage so that the correct instruction is fetched in the next cycle, hence, saving the wastage of extra clock cycles.

Branch predictors are used to enhance the flow of the pipeline as it helps eliminating some of the stalls produced by the conditional branches by trying to guess if the branch is taken or not before leaving the fetch stage [8]. Implementation of the branch predictors with pipeline will increase the performance of the CPU when compared to the non-pipeline CPU, also when prediction rate is high it minimizes the miss rate and hence it avoids the wastage of time. There are several Branch Prediction algorithms such as ALWAYS NOT TAKEN, ALWAYS TAKEN, BINARY and DYNAMIC etc.

A. Hardware Requirements

1) Xilinx SPARTAN-6: An Atlys development board based on a Xilinx Spartan-6 LX45 FPGA, speed grade -3 and compatible with all the Xilinx freely available design tools, is used to test the accuracy of the design logic in real hardware environment [9].

2) Power adapter: Atlys board requires an external 5V, 4A with a coax center-positive 2.1mm internal-diameter plug, a suitable adapter is already provided as a part of the Atlys kit.

3) USB/JTAG cable: A standard USB type A/type B cable is used for communication between the host and the target system i.e., to dump the code and analyse its results.

535

Selective Suppression of IRNSS S-band Signals for Specific Applications

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Abstract— The Indian Regional Navigational Satellite System (IRNSS) has become operational recently. IRNSS S-band signals are more vulnerable to Radio Frequency Interference (RFI) as the S-band spectrum is congested with several other signals including the signals operating in the license free band. It operates in L5 and S1 frequencies. The performance of IRNSS receivers meant for non-precision applications can be enhanced by suppressing S1 signals. In view of this, an aluminium reflector is designed and developed to selectively suppress S1 signals. The results are encouraging.

Keywords—IRNSS, S- band, RF Interference

I. INTRODUCTION

Global Positioning System (GPS) is an already established space-based navigation system, with applications in diversified fields of science and engineering [1]. However, the Indian Regional Navigation Satellite System (IRNSS) is an emerging satellite based navigation system providing an independent positioning and timing service over Indian land mass and about 1500 Kms from the mainland [2]. IRNSS is designed, developed and controlled by the Indian Space Research Organization (ISRO). The IRNSS satellite constellation consists of 4 satellites (IRNSS 1A, 1B, 1D, 1E) in inclined geosynchronous orbits and three in Geostationary Earth Orbit (IRNSS 1C, 1F, 1G). In contrast to other satellite constellations which use only L-band frequencies, IRNSS uses both L-band (1164.45 – 1188.45 MHz) and S-band (2483.5-2500MHz) signals [3]. The use of these bands compared to C band gives acceptable received signal power with reasonable satellite transmit power levels, and less ionospheric delay and fluctuation in delay, compared to UHF [4]. Several researchers have investigated various aspects of IRNSS such as ephemeris errors even before the constellation became fully operational [5], [6]. IRNSS has been operational since June 2016. Under an MOU between SAC,ISRO, India and CBIT, Hyderabad, India two IRNSS receivers were installed at CBIT (17.39° N, 78.31° E). Since then several field trials on the receiver are being carried out. This paper investigates the robustness of IRNSS signals which are subject to interference from S-band terrestrial sources like Wi-Fi, Bluetooth, Zigbee etc. operating in the license free band of 2.4 GHz. For several general, day to day and non-precision applications, single frequency IRNSS receivers can be used. For such applications, S-band signal interference is detrimental and compromises the position accuracy. Therefore, in this paper it is proposed to design and develop an aluminium reflector plate at S1 frequencies to avoid interference and improve the receiver performance.

II. DESIGN OF ALLUMINIUM REFLECTOR FOR IRNSS RECEIVER

Antennas are an essential part of any navigation system. Its performance can be evaluated by measuring several parameters such as gain, bandwidth, phase centre etc. [6]. Using reflectors, antenna performance can be either degraded or enhanced depending upon the applications. In this paper, an aluminium reflector plate is used to selectively suppress the S-band signals, the details of which are discussed in this section.

A. Basic Analysis

To investigate the robustness of IRNSS signals, it is proposed to study the penetration capability of the signals through a reflector. For this an aluminium plate is used as a reflector positioned in the line of sight path between satellite and receiver antenna. To decide the position and orientation of reflector plate near the receiver antenna, the azimuth and elevation information of the IRNSS satellites is determined. Geostationary satellites have minimum variation of position with respect to earth station. Hence reflector position calculation is done for IRNSS 1G. The azimuth and elevation variations are found to be 97.5° – 109° and 26.9° – 31°. Even though originally it was planned to launch 1G satellite as a geostationary satellite, later it was given an inclination of 5° to improve dilution of precision. Therefore, such a variation in azimuth and elevation is seen for this satellite.

A square reflector plate of dimensions 0.25m x 0.25m and thickness (t) 0.254mm (10mil) (justification of these values can be found in part II B, Calculation of Reflector Design Parameters) is placed in LOS path of IRNSS 1G signal as shown in Fig. 1. The reflector plate is mounted on a tripod whose height can be varied easily. Also a provision is made to rotate the plate both in horizontal and vertical direction. The distance from the antenna to the reflector is also variable. The penetration depth (δ) of such a plate is computed as [7].

$$\delta = \sqrt{\frac{\rho}{\pi f \mu}} \qquad (1)$$

Where ρ, the resistivity of the aluminium is 2.6548×10^{-8} Ω-m, f is the frequency in Hertz, μ is the absolute magnetic permeability of the conductor ($\mu_r \times \mu_o$), μ_o is $4\pi \times 10^{-7}$ H/m, μ_r is 1.00002 [8]. δ is 2.3908μm at 1176.45 MHz and 1.6427 μm

18

"Video Enhancement Using Contrast Limited Adaptive Histogram Equalization"

"RLG Dither signal removal using wavelet transforms",

RLG Dither Removal Us ing Wavelet Transforms

Bharath Regimanu, Kakarla Subba Rao. Kishore Chandra Das. Ch.Raja Kumari, P.Neeharika

Abstract— Ring Laser Gyroscopes (RLGs) are widely used in many airborne and navigation systems for accurate measurement of the true rotation of the body movement. But the RLG's suffer a serious problem at low frequencies known as Lock –in frequency. To avoid lock-in problem, the RLG is vibrated mechanically to a high frequency which is known as Dithering. In order to get the true rotation of the body the dither signal has to be removed. Single stage, multistage and multirate filters are suggested to remove the dither signal. These filters have the disadvantage that either the FIR filter length is too large or the phase characteristics are not linear. In this work multiresolution techniques using Wavelet Transforms (WTs) are used to remove the dither signal. Six level multi resolution analysis is carried out with various types of wavelets like Discrete Meyer and Daubechies 45 (db45) etc. With none of the standard wavelets, the original and reconstructed signals are matched. A new wavelet is designed to remove the dither signal. The required signal can be constructed back using the approximation coefficients at level 6. The dither signal is attenuated by 265 dB, and the phase characteristics are found to be linear in the pass band. The computational complexity is also less compared to the three stage combined filter reported earlier.

Keywords—Ring Laser Gyroscope, Multiresolution,

I.INTRODUCTION

Gyroscope is basically a rotation sensor which is used to measure the absolute angular rotation of any rotating system. This instrument is an essential requirement for navigation and control of a moving vehicle. The advantage of RLG is that it is less sensitive to environmental conditions and its performance does not depend on gravity of the earth 'g'. It is also less sensitive to thermal conditions and magnitude fields. Hence it is more accurate and more stable.

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Investigation of Anomalous Ionospheric Gradient Effects on the Performance of Indian GBAS

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Abstract— Ground Based Augmentation Systems (GBAS) ensure safe low-visibility aircraft landings at suitably equipped airports. Low latitude ionosphere characterized by ionospheric irregularities and anomalous gradients pose a severe threat to the performance of Indian GBAS. No significant work has been reported on the range and position domain errors introduced by severe gradients identified at low-latitude stations. In this paper, extensive analysis of range domain errors, induced by anomalous gradients is carried out. From the analysis carried out in this work, it is observed that PRN affected by gradient of 460 mm/km induced range error of 8.11m. For other PRNs the error is only upto 2.3m.

Keywords— Ground Based Augmentation Systems, ionospheric gradients, differential range error.

I. INTRODUCTION

GBAS is a 21st-century safety-critical system capable of supporting aircraft PA and landing even in low visibility conditions. GBAS provides an assured accuracy, availability and integrity initially to Category I PA, and eventually to CAT II, and III PAs [1] [2]. To achieve such high accuracy levels, the Ground Facility computes a single pseudorange correction for each satellite and transmits the corrections to all the users in the service volume. The single correction accounts for all common errors (atmospheric and satellite based errors) between the Ground Facility and the user and hence these errors can be completely eliminated when user applies differential corrections. Errors that are not identical at Ground Facility and the user cannot be cancelled out with differential corrections and cause residual errors at the user. GBAS users compute the bounds on residual errors (called protection levels), with the help of the error sigmas broadcast by the Ground Facility. The residual error that is most challenging to GBAS users is the ionospheric spatial decorrelation error. This error builds up due to the fact that ionosphere exhibits spatial variations, and hence the delays experienced by the Ground Facility and the user are different, giving rise to spatial gradients of ionospheric delay between the two. The spatial gradients are extremely large (of the order of hundreds of mm/km) under ionospheric storm conditions [3]. Several researchers investigated the aspect of large gradients at mid-latitudes ([4]; [5]; [6]; [7]). The impact of such large gradients on GBAS performance has also been investigated ([8]; [9]). At low latitudes, Srinivas et al., [10] analyzed the GPS data of two stations namely National Geophysical Research Institute (NGRI), Hyderabad (17.41°N, 78.55°E) and Research and Training Unit for Navigational Electronics (NERTU) of Hyderabad (17.44°N , 78.47°E). Based on the available data, data of four years (from 2008 to 2012) is analyzed and

gradients as large as 300–460 mm/km were observed. Such anomalous gradients induce not only large range errors but also vertical position errors. Range errors induced by large gradients are computed in this paper.

II. ANOMALOUS IONOSPHERIC GRADIENTS AND THEIR EFFECTS ON LAAS

Under normal conditions, ionosphere over equatorial and low latitude regions is characterized by high spatial variation of ionospheric delays. Abnormal solar events like Coronal Mass Ejections from the Sun produces large ionospheric delays and large gradients of the order of hundreds of mm/km. Such large gradients introduce several meters of error in range domain. The ionosphere induced error in range domain is called Differential Range Error (DRE (ε)) and it is directly proportional to the ionospheric gradient amplitude (g_o), for a given separation distance between the LGF and the user (x) [11] (Eqn.1).

$$\varepsilon = \min\left[\frac{50}{W_-}, \max(g_-)\right] \times (x + 2\tau\, v_{---}) \quad (m) \qquad (1)$$

Where

W_- is the width of the ionospheric front (km)

τ_- is the time-constant of the smoothing filter (100s)

V_{----} is the velocity of the aircraft (0.07 km/s)

III. METHODOLOGY

Initially, the dependence of DRE on key parameters such as x and g_- is analyzed. Later, DRE is computed for all the satellites commonly visible between NGRI and NERTU stations on a quiet day (8th March 2012 (1<Kp<5)). Finally, the DRE due to anomalous gradient of the order of 460 mm/km observed between the two stations on a storm day (09 March 2012 (2<Kp<8)) is estimated.

IV. RESULTS AND DISCUSSION

Fig. 1 shows the simulation result of DRE variation with respect to distance between the LGF and user (x). For a given value of gradient, x is varied from 1 km to 45 km (GBAS applicable distances). It is observed that DRE value increased linearly with distance and reached a value as much as 30 m, when the separation is 45 km. Also, the variations in DRE values are directly proportional to the magnitude of the gradient (g_-).

1

931

"Investigation on Performance of Distributed Autonomous Sensors on Embedded Platforms"

Investigation on Performance of Distributed Autonomous Sensors on Embedded Platforms

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M Rajendra Prasad ; B Santosh Pawan Kumar ; A Swarnamani ; A Lahari ; P Prathyusha ; D Krishna Reddy **All Authors**

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Abstract

Document Sections

I. Introduction

II. Literature Survey and Related Work

III. Design Methodology

IV. Results and Discussions

V. Conclusion

Authors

Figures

References

Abstract:

A node is an intersection point that can generate, receive, store or transmit data along distributed network routes and allows us to analyze the data at a particular point. In a network node, each sensor has several parts such as transceiver with an internal or connection to an external antenna, micro controller, electronic circuits for interfacing sensors and energy source. The scaling of single node cluster has a limitation of CPU computational powers, maximum memory and number of processes that can run on a single machine. In order to overcome these limitations multi node clusters are needed. To process huge amount of data at the same timeframe, multi node clusters are used. To monitor environment and physical conditions such as temperature, ambient light etc. and to cooperatively pass their data through network to a main location a distributed autonomous sensor called Wireless Sensor Networks (WSN) are used. WSN is a low-cost technology which is built of nodes from few to several hundred or thousands where each node is connected to single or several sensors. It acts like a bridge between virtual and real world. Besides, using a single platform for WSN, the proposed work send and receive the data on different platforms like FRDM-KL25Z, and Arduino Uno using WSN Multiple Nodes. A novel methodology is developed to create a node, transmit the data from the sensor through the created node, calculation of time to transmit and receive data through the nodes and comparing the network latencies.

"System Level Performance Analysis of Embedded System for GSM Applications"

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System-Level Performance Analysis of Embedded Systems for GSM Applications

M. Rajendra Prasad ✉ & D. Krishna Reddy

Conference paper | First Online: 25 March 2017

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Abstract

An embedded system is an integration of customized hardware and optimized software designed for a specific function running continuously. In recent years, with the advent of increasing embedded telecom, an application running on dedicated platforms and the evaluation of system-level performance are essential. This paper proposes the procedure to analyze the low-level performance of three embedded platforms. These values are useful for GSM protocol stack developers for MS (Mobile Station), BTS (Base Transceiver Station), BSC

"Development of System Level Computational Platform for IP- BTS Telecom Application"

Development of System Level Computational Platform for IP-BTS Telecom Application

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M. Rajendra Prasad ; D. Krishna Reddy **All Authors**

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Abstract

Document Sections

I. Introduction

II. Related Work

III. Hardware & Software Specifacations

IV. Building the Bootable Image for Target Board

V. Results and Discussions

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Authors

Abstract:

IP-BTS (Internet Protocol Based Base Transceiver Station) is a small computing hardware module designed for integration into an industry standard tower PC housing which provides a complete GSM Access Point. It is used to optimize cost of transmission line for high density multi-band base stations. This paper describes the detailed procedure to develop system level boot loader software (universal boot loader-u-boot) for IP-BTS which is a customized hardware with PowerPC based processor board running on RTLinux operating system. This paper also discusses the brief presentation of the customized hardware platform at system level and the boot loader software development procedure for embedded telecom application IP-BTS. Designing suitable boot software at system or boot level is a complex and challenging task which is included in development of an embedded system for telecom applications. The boot loader connects application software through customized hardware and Real-Time Operating System (RTOS). It is not only responsible for initialization of the processor board and other module of IP-BTS software also upgrades operating system images and IP-BTS software versions. The early initialization code is always developed in the processor's native assembly language. In this paper we presented detailed procedure to transplant boot loader (u-boot) on Power PC based customized board and tested successfully with results.

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EXTRACTION OF CELLULOSE NANO FIBERS AND DEVELOPMENT OF NANO CELLULOSE FIBER COMPOSITES - A REVIEW

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Abstract- Natural fibers are abundantly available in nature at a low cost and have the main advantage of being biodegradable. They have low density and high toughness. The structure of natural fiber consists of cellulose crystals surrounded by hemi-celluloses and lignin. Lignin is the glue like substance that binds all the component of the fiber. Strength of the fiber is mainly due to the pure crystalline structure of the cellulose. Various plant sources like, kenaf, jute, flax, hemp, sisal, okra, banana and Roselle are used to produce nano cellulose fibers. The natural fibers are subjected to a sequence of treatments like, alkaline treatment, bleaching, cryo crushing, grinding, high pressure homogenization, acid hydrolysis, ultra-sonication, TEMPO-mediated oxidation, steam explosion, etc. These treatments yield cellulose fibers of three grades such as, micro-fibrillated cellulose, nano crystalline cellulose and bacterial nano cellulose. The fibers obtained in each stage are characterized for their chemical composition. The cellulose nano fiber composites are made using various biodegradable polymers such as, poly lactic acid, thermoplastic starch and poly hydroxyalkanoate (PHAS), poly vinyl alcohol (PVA) and poly esteramide. Partially degradable nano cellulose composites are made using polypropylene, polyester, polyethylene resins are used for making variety of components for domestic, automobile, optical sensors, electronic devices, structural, medical, textile, paint, paper board and packaging industry and also for hygiene products, cosmetics. In this paper, the status of research on extraction of nano cellulose fibers and various processes involved and type of materials employed for making the nano cellulose products are presented focusing the scope for further research and development of nano cellulose composites.

Keywords: Nano cellulose fibers, biodegradable nano cellulose composites, nano cellulose composites for packaging, electronics and cosmetic industry.

I. INTRODUCTION

Due to the increased attention on the issues related to degradation of environment, there has been a great demand in the recent years from all sections of the society for the biodegradable and environmental friendly products from sustainable resources [1, 2]. Such products are developed using various biodegradable resins such as, poly lactic acid, thermoplastic starch and poly hydroxyl alkanoates (PHAS), poly vinyl alcohol (PVA) and poly ester amide along with natural fibers [3]. Nano cellulose composites are made using polypropylene, polyester, polyethylene resins and modified starch. Cellulose fibers derived from various plant sources are used extensively in textile, paper and cosmetic industries. In the recent years, nano cellulose products are used as an alternative to plastics to avoid detrimental effects of plastic products. Various natural fibers being used in raw form or in modified form for different applications are presented in Fig.1. The structural elements of natural fibers such as lignin, pectin, hemicelluloses and cellulose are described in sections II and III. Different stages of extraction of nano cellulose fibers are presented in sections IV. Development of nano cellulose composites and their applications are presented in sections V and VI respectively.

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1

Effect of plan shape on the wind pressures on buildings: A CFD Approach

Effect of Plan Shape on the Wind Pressures Onbuildings- A CFD Approach

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Abstract— Lateral loads i.e. wind load, seismic load, govern the design of tall buildings and their computation is of paramount importance for the efficient analysis of structures. For very tall buildings, wind loads are more predominant than seismic loads and the present wind load code IS 875 (PART-3) provides provisions for design pressure and force coefficients for some standard shapes. But with the present trend of adopting complex geometries for buildings, the present specifications are inadequate for the computation of wind loads. For such cases, wind tunnel testing, which is required to generate equivalent atmospheric turbulence properties and boundary layer flow inside the wind tunnel can be adopted, but is too costly and time consuming. In such a scenario, computational fluid dynamics, an analytical tool comes handy and provides a reasonable and economical solution.

Computational Fluid Dynamics, popularly known as CFD, basically involves obtaining numerical solution for the fluid problems often governed by Navier Stoke equations. It needs high speed computing systems and efficient algorithms. In the present work, an attempt is made to predict the wind pressures on buildings of various shapes with various floor heights and make a comparative study. K-epsilon turbulence model is considered for the analysis and software ANSYS - FLUENT is used for CFD analysis.

Keywords— Computational fluid dynamics (CFD), Boundary layer, K-epsilon, UDF- Velocity profile.

I. INTRODUCTION

Wind is a phenomenon of great complexity because of the many flow situations arising from the interaction of wind with structures. Wind is composed of a multitude of eddies of varying sizes and rotational characteristics carried along in a general stream of air moving relative to the earth's surface. These eddies give wind its gusty or turbulent character. The gustiness of strong winds in the lower levels of the atmosphere largely arises from interaction with surface features. The average wind speed over a time period of the order of ten minutes or more tends to increase with height, while the gustiness tends to decrease with height.

The characteristics of wind pressures on a structure are a function of the characteristics of the approaching wind, the geometry of the structure under consideration, and the geometry and proximity of the structures upwind. The pressures are not steady, but highly fluctuating, partly as a result of the gustiness of the wind, but also because of local vortex shedding at the edges of the structures themselves. The fluctuating pressures can result in fatigue damage to structures, and in dynamic excitation, if the structure happens to be dynamically wind sensitive. The pressures are also not uniformly distributed over the surface of the structure, but vary with position.

The purpose of the present study is to investigate the dynamic behaviour of tall structures of various shapes when subjected to wind. For the simulation part domain size and mesh size influences the accuracy of the result. The boundary conditions and wall condition around the bluff body should be considered. The main focus of the present study is to reduce the unsteadiness of wake region around the structure, which creates high pressures, by considering the appropriate shape of the structure. Aerodynamic forces on tall building models with same area were using the pressure contours generated on various faces of models are calculated. [3]

II. OUTLINE OF MODELS CONSIDERED

A. Configuration of tall building models:

The tall buildings used for the experiments are square, circle, ellipse and parabolic shapes. The pressure contours are generated for various angles of attacks like 0, 90 and 180. The height of the structures considered are 150m, 195m and 240m Selection of models were based on the aerodynamic nature of the buildings.

B. Computational Fluid Dynamics

Computational fluid dynamics (CFD) is a branch of fluid mechanics that uses numerical analysis and algorithms to solve and analyse problems that involve fluid flows.

543

EFFECT OF RECYCLED AGGREGATE ON FRESH AND HARDENED STATE PROPERTIES OF SELF-COMPACTING CONCRETE

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Abstract

Concrete is the most widely used construction material in which Aggregates take maximum share. This poses the problem of acute shortage of aggregate and scouring of Granite Quarry. At the same time, the quantity of recycled Concrete aggregates from old Construction Demolished waste is piling up in many areas. If it is possible to use this RCA in fresh concrete by partial/complete replacement of Natural Coarse aggregates, then this will not only save the cost of construction at the same time it will solve the problem of disposal of this CDW waste. Therefore, the objective of this research work is to develop sustainable self Compacting Concrete (SCC) of various grades using Recycled Concrete Aggregate (RCA), fly ash etc. This paper discusses the fresh and hardened state properties of SCC of M30 grade using Natural and Recycled Concrete Aggregates. Quantification and Characterization was done using Modified Nan Su Mix design analysis.

Keywords: Self Compacting Concrete (SCC), Recycled concrete aggregates (RCA), Fresh Properties, Mechanical Properties, Modified Nan Su Method.

Introduction

The term Self-Compacting Concrete (SCC) refers to a "new" special type of concrete mixture, characterized by high resistance to segregation that can be cast without compaction or vibration. It flows like "honey", de-aerates, self-compacts, and has nearly a horizontal concrete level after placing. Products made with SCC have an excellent finish, and are virtually free of bug holes The basic components of the mix composition of SCC are the same as those used in conventional concrete. However, to obtain the requested properties of fresh concrete in SCC, a higher proportion of ultrafine materials and the incorporation of chemical admixtures, particularly an effective superplasticizer, are necessary. Because of this, self-compatibility can be largely affected by the characteristics of materials and mix proportion. No standard or all-encapsulating method for determining mixture proportions currently exists for SCC. However, many different proportion limits have been listed in various publications. Therefore, a rational mix-design method for NASCC and RASCC using variety of materials is necessary. The proposed Modified Nan Su Mix design of SCC must satisfy the criteria on filling ability, pass ability and segregation resistance.

Mix Design Method: Initially EFNARC first approach for Modified Nan Su Mix design is used, and then the proportions of materials modified after the evaluation by fresh tests was done. The modifications are made according to EFNARC guidelines.

Sustainable Design: Sustainability in general terms is to create an economic system with enhanced performance with long term safety. Sustainability is the one which mainly focuses

Studies on strength characteristics of Self-curing concrete

STUDIES ON STRENGTH CHARACTERISTICS OF SELF-CURING CONCRETE

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Abstract

Today concrete is most widely used construction material due to its good compressive strength and durability. Depending upon the nature of work the cement, fine aggregate, coarse aggregate and water are mixed in specific proportions to produce plain concrete. Plain concrete needs congenial atmosphere by providing moisture for a minimum period of 28 days for good hydration and to attain desired strength. Any laxity in curing will badly affect the strength and durability of concrete. Self-curing concrete is one of the special concretes in mitigating insufficient curing due to human negligence paucity of water in arid areas, inaccessibility of structures in difficult terrains and in areas where the presence of fluorides in water will badly affect the characteristics of concrete. The present study involves the use of shrinkage reducing admixture polyethylene glycol (PEG 400) in concrete which helps in self-curing and helps in better hydration and hence strength. In the present study, the effect of admixture (PEG 400) on compressive strength, split tensile strength and modulus of rupture by varying the percentage of PEG by weight of cement from 0% to 2% were studied both for M20 and M40 mixes. It was found that PEG 400 could help in self-curing by giving strength on par with conventional curing. It was also found that 1% of PEG 400 by weight of cement was optimum for M20, while 0.5 % was optimum for M40 grade concretes for achieving maximum strength without compromising workability.

Index Terms: Self-curing concrete; Water retention; Relative humidity; Hydration; Absorption; Permeable pores; Sorptivity; Water permeability

1. INTRODUCTION

Proper curing of concrete structures is important to meet performance and durability requirements. In conventional curing this is achieved by external curing applied after mixing, placing and finishing. Self-curing or internal curing is a technique that can be used to provide additional moisture in concrete for more effective hydration of cement and reduced self-desiccation.

1.1 Methods of self curing

Currently, there are two major methods available for internal curing of concrete. The first method uses saturated porous lightweight aggregate (LWA) in order to supply an internal source of water, which can replace the water consumed by chemical shrinkage during cement hydration. The second method uses poly-ethylene glycol (PEG) which reduces the evaporation of water from the surface of concrete and also helps in water retention.

1.2 Mechanism of Internal Curing

Continuous evaporation of moisture takes place from an exposed surface due to the difference in chemical potentials (free energy) between the vapour and liquid phases. The polymers added in the mix mainly form hydrogen bonds with water molecules and reduce the chemical potential of

Object classification using SIFT algorithm and transformation techniques

Cognitive Informatics and Soft Computing pp 403–408

Object Classification Using SIFT Algorithm and Transformation Techniques

T. R. Vijaya Lakshmi ✉ & Ch. Venkata Krishna Reddy

Abstract

Recognition of objects, as well as identification and localization of three dimensional environments is a part of computer vision. In the proposed study the objects in a war field are classified. Images extracted from the video stream are utilized to classify the objects of interest (soldier, tree and tank). Distinguishable features of the objects are extracted and these features are used to identify and classify the objects. The SIFT algorithm used to find the features from such images are processed to classify the objects such as soldier, tank, tree, etc. The key

546

Dr. Ahmed F. Zobaa

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Probabilistic Analysis of Partial Discharge in Power Transformer due to the Presence of Spherical Particle

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Abstract:- The paper deals with the partial discharge in a power transformer due to presence of metallic particle in a transformer oil or mineral oil. A conducting particle is assumed to be present in the oil, between High Voltage (HV) winding and pressboard inner cylinder gap. It is assumed that particle moves in random direction along with the transformer oil. Probabilities of Partial Discharge (PD) have been calculated by assuming various field intensification factor β and threshold voltages. Simulations have been carried out to find the probability of partial discharge at different oil velocities. Results of this paper show that the probability for the occurrence of partial discharge varies with respect to field intensification factor β, threshold voltage and velocity of the oil, as particle is also assumed to move with the same velocity of oil. It is observed that probability of PD increases with β for a given threshold voltage.

Keywords:- Power transformer, Partial discharge, Field intensification factor, Particle movement

I. INTRODUCTION

New technologies are being introduced gradually in the area of power generation, transmission and distribution. It is required to step up and step down the voltages to make it available as per necessity. Higher voltage rating power transformers have been developed and employed for transmission of larger power to longer distances. Consequently, the demand on insulation also increases. In addition, phenomenon associated with voltage stress and PD becomes more predominant at relatively higher voltages. Thus preventing partial discharges at these voltages becomes a challenging task. The most common cause for failure of power transformer is found to be due to partial discharge in the transformer. Although PD is allowed up to 250 Pico- Coulombs (pC) as per standard at the test voltage, it becomes difficult to limit at sharp corners and curvatures of the conductors. As a result the above value exceeds at this voltage.

PD can occur due to the presence of particles, which are conducting in nature moving along with the transformer oil. A work by Ward et al [1] shows the impact on field intensification factor at the particle and its influence in breakdown analysis. Hu Yue et al [2] proposed a method to find the location of partial discharge using Monte-Carlo simulation. Van Brunt and Cernyar [3] simulated AC generated discharge pulses using Monte-Carlo technique and found that results are similar to the experimental results. M.Hikita et al [4] carried out a Monte-Carlo simulation to generate the PD distributions and proposed a model for PD mechanism. Rain and Tabazeon [5] experimented with the breakdown mechanism of liquid insulation in the presence of free and fixed particle and represented that breakdown occurs at lower voltage when the particles are free. Mishra et al [6] measured Partial Discharge activity in GIS with the presence of AC voltages and at various pressure levels.

A 100 MVA 11/132/220 kV auto transformer is considered for analysis. This transformer has three windings, viz. low voltage (LV), Intermediate voltage (IV) and High Voltage (HV). For the present analysis only HV winding is only considered because it provides an onerous condition for initiation of Partial Discharge.

A Solution to the Multi-Objective Optimization Problem with FACTS Devices using NSHCSA Including Practical Constraints

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Abstract— Optimal Power Flow (OPF) with FACTS devices place a vital role in power systems. In this paper, a proposed Non-dominated Sorting Hybrid Cuckoo Search Algorithm (NSHCSA) for multi objective optimal power flow problem with series FACTS devices namely Static Synchronous Series Compensator (SSSC) and Interline Power Flow Controller (IPFC) with different objective functions including the practical constraints, operating constraints and the installation cost of FACTS devices are considered for this analysis. Some heuristic rules are suggested for the optimal location of FACTS devices to reduce the number of possible locations. Cuckoo Search Algorithm (CSA) and Genetic Algorithm (GA) are combined to form the proposed Hybrid Cuckoo Search Algorithm (HCSA). The fuzzy decision making tool is used to select optimal Pareto front solution for multi objectives. The effectiveness of the proposed method is tested on IEEE-30 bus test system with FACTS devices. The results are analyzed and compared with existing methods.

Index Terms— Hybrid cuckoo search algorithm; Multi objective optimization; Pareto solution; Location of FACTS device; Device installation cost; Non-dominated Sorting; power system severity.

I. INTRODUCTION

The latest FACTS devices are unified power flow controller (UPFC) and interline power flow controller. In the past, much effort has been made in the modeling of the UPFC for power flow analysis [1, 2]. UPFC compensate a single transmission line, whereas the IPFC is used for the compensation and power flow control of multi-line transmission system. Like the static compensator (STATCOM), SSSC and UPFC, the IPFC employs the voltage sourced converter (VSC) as a basic building block reported by L. Gyugyi et al. [3]. A steady state control of power system parameters with current and voltage operating constraints has been presented by X.P.Zhang [4] in which it uses a multi control functional model of SSSC. Mathematical models of generalized unified power flow controller (GUPFC), IPFC and their implementation in Newton power flow are described by X.P.Zhang [5] to demonstrate the performance of GUPFC and IPFC.

S. Teerathana et al. [6] proposed OPF method with IPFC to solve load flow problem and the power and the power generation with the minimum cost. An injection model for congestion management and total active power loss minimization in electric power system was developed Jun Zhang and Akihiko Yokoyama [7]. A current based model of SSSC and IPFC has developed by Vinkovic A and Mihalic R [8, 9]. Ramin Rajabioun [10] proposed a novel evolutionary algorithm cuckoo optimization algorithm, suitable for continuous nonlinear optimization problems. Xin-She Yang et.al [11], initiated to formulate a new meta-heuristic algorithm, called cuckoo search algorithm for solving optimization problems.

The study of the former literature reveals that all the FACTS devices incorporated for power flow management of single transmission line. But, this paper describes the performance of a multi-line FACTS device which is IPFC. A mathematical model of IPFC which is commonly known as IPFC power injection model has presented. In this paper while understanding the impact of IPFC on power system networks this model is very much useful. IPFC power injection model is associated with Newton-Raphson (NR) power flow solution method to study the effects of IPFC parameters in power flow studies. Numerical analysis is carried out on IEEE 30 bus system to demonstrate the performance of the IPFC model.

From the above literature, it is observed that the OPF problem is solved using different techniques without considering the practical constraints such as ramp rate limits, Prohibited Operating Zones (POZ) and the installation cost of FACTS devices. In this paper a non-dominated sorting hybrid cuckoo search algorithm to find the solution of multi objective optimal power flow problem in the presence of FACTS

2615

Multi-objective OPF Problem Analysis with Practical Constraints in the Presence of FACTS Devices using NSHCSA

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Computational Intelligence: Theories, Applications and Future Directions - Volume II pp 423–434

Multi-objective OPF Problem Analysis with Practical Constraints in the Presence of FACTS Devices Using NSHCSA

M. Balasubbareddy ✉

Abstract

This research paper proposes a hybrid cuckoo search algorithm (HCSA) for OPF problem solution in power systems. In this, genetic algorithm (GA) is combined with conventional cuckoo search algorithm (CSA) to improve the performance of the single-objective and multi-objective problem solution with satisfying equality, inequality, and practical constraints such as ramp-rate limits and prohibited operating zones (POZ). Fuzzy approach is used to select optimal solution required by the user from the total solutions.

550

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Performance of Custom Power Devices for Power Quality Improvement

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Abstract— During Last decade power quality problems has become more complex at all level of power system. Recently, the Power electronics controllers are gaining concern to provide the quality of power for both power suppliers and consumers. Nowadays a new concept of custom power is used for customer's satisfaction. This paper presents a comprehensive survey of custom power devises in order to improve quality of power. Custom power devices (CPDs) including active voltage conditioner (AVC), dynamic voltage restorer (DVR), and distribution static synchronous compensator (D-STATCOM) are simulated on the modified IEEE-16 bus radial distribution system using Matlab/Simulink software to investigate performance efficiency of each device under various Power quality disturbances including voltage sags, voltage interruption, and harmonic distortions. The simulation results demonstrate that the effectiveness of each device to compensate different types of power quality disturbances depends on the device's arrangement and characteristics.

Index Terms— Active Voltage Conditioner, Dynamic voltage restorer, D-STATCOM, Custom power devices, Power quality, Power quality disturbance.

I. INTRODUCTION

The electric power system consists of three major functional blocks those are generation, _____ion and distribution. As per reliability consideration in power system, generation unit must generate satisfactory amount of power, transmission unit should supply maximum power over long distances without overloading and distribution system must deliver electric power to each consumer's premises form bulk power systems. Distribution system is located at the end of electric power system and is directly to the consumer, so the power quality depends upon the state of distribution system. The reason for this is failure in the electric distribution network accounts for about 91% of the average consumer's interruptions. Earlier, power system reliability focused on generation and transmission system due to capital investment in these systems. But today, distribution system is receiving more attention as reliability is concerned. Power quality issues are achieving a major concern due to the increase in number of sensitive loads. Also the extensive use of electronic equipment, such as information technology equipment, adjustable speed drives (ASD), arc furnaces, electronic fluorescent lamp ballasts and programmable logic controllers (PLC) have entirely altered the electric loads nature. These loads are the foremost sufferers of power quality problems. the non-linearity of these loads cause disturbances in the voltage waveform. The utility will likely to deliver a low distortion balanced voltage to its customers, particularly those with sensitive loads. For the improvement of reliability and power quality of system, the custom power devices are introduced into the power system. DSTATCOM, DVR, AVR, APC etc. are some of the major devices used for the improvement of voltage sag and swells. With the help of these FACTS devices[12], we are capable of reduce the problems related to power quality.

This paper presents a study on the performance of the most renowned CPDs[1] including active voltage conditioner (AVC), dynamic voltage restorer (DVR), and distribution static synchronous compensator (D-STATCOM) under different PQ disturbances. Each device is modelled on the modified IEEE 16-bus[2] radial distribution system using Matlab/Simulink software. Several PQ disturbances including voltage sag, momentary voltage interruption, and voltage and current harmonic distortions are generated to investigate and compare the advantages and limitations of CPDs.

II. POWER QUALITY DISTURBANCES

Electricity consumers face power quality problem at all stages of usage. Actually, Power quality[3] defines the assets of power supply distributed to the users in normal operating conditions. New electronic equipments and devices are more prone to power quality problems[10,11]. Reduced PQ has become a major problem for both power suppliers and customers. Poor PQ means there is enough variation in the power supply to affect equipments and may lead to their mis-operation or failure. It is unfeasible to completely control disturbances on the supply system but efforts and investments are made by utilities to avoid interruptions. Normal operations such as switching loads and capacitors or faults and opening of circuit breakers to clear faults mainly cause disturbances. The most regular and important PQ issues that require practical solutions are as follows:

A. Voltage Sag or Dip

Voltage sag is defined as a drop in the normal voltage level between 10 and 90% of the nominal rms voltage at the power frequency, for durations of 0. 5

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Deep Learning Based Hand Gesture Translation System

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Abstract—

Sign language plays an important role for the people who have the hearing and speech problems. For the Non- verbal communication between the deaf-mute people. For the Kinetise gestures plays a crucial role in our day-to-day life. There are different sign languages that are available Hand Gesture Translation is one among them. The sign language is a collection of different Hand Gesture symbols and Each Hand Gesture symbol have special meaning. It is mostly used by the deaf-mute persons to express their views and thoughts very quickly with the normal people. Main problem with this system is very difficult to translate the symbols and required special training on sign language. To overcome this problem we have implemented a Hand Gesture Translation System it provides an ability to interact with the machine efficiently. It will help the deaf-mute to express their feelings and views more effectively with the normal people. In this paper implemented software prototype that will automatically recognize the hand gestures with an accuracy of 93.4% for gesture Translation which will help the deaf and dumb people to interact easily with the normal people. The main aim of the project is to provide the easy way of communication between the normal people and the deaf-mute through gestures.

Keywords—Hand Gestures; Deep learning; Machine learning; Pre-Processing Image; Feature Extraction of Image; Image Processing; Deaf-mute.

I. INTRODUCTION

The Sign language plays an vital role for the communication between the deaf-mute. Hand Gesture Translation System(HGT System) is one among them, which will help the deaf and dumb people to communicate with the normal people through different hand gestures. These hand gestures will help the deaf and dumb people to express their views and thoughts very quickly with the people. The output is produced in the form text so that the people can recognize what the deaf and dumb are saying. The sign language mostly reduces the communication gap between the deaf-mute and the other people.

There are two types of sign languages that are available one is Image based sign language and another one is Sensor based sign language. Sensor based sign language is very costly compared with the Image based sign language because components whereas Image based sign language is built through Camera. Our Laptop consists of inbuilt Camera which will help to capture the image objects very easily. Hand Gesture Translation System is the software prototype it uses the Laptop inbuilt camera for capturing the different hand gestures and produces the output in the form of Text. It is mostly used by people who have speech and hearing problems to speak with the people. Because sometimes the people cannot understand what deaf and dumb people are saying in that case these hand gesture Translation system will used because the output is produced in the form of text, which the normal people can able to read. One of the Advantage of Image based approach is not to wear the Hand Gloves, Helmet etc. Sign language identification is significant in many domains areas such as user-interface, Interaction, security and multimedia. There are two parts in sign language identification one is sign detection and another one is sign identification. The system will use the web camera for capturing the hand gestures and after successfully capturing it will recognize these hand gestures and produces the output in the form of text.

In Machine Learning is useful in solving different real-time problems. This technology is mostly performs complex jobs such as classifying data, Translation of data, identifying data and predict the values. The basic idea of every machine learning project is to give a input data to the machine to generate a system which can be produce the result. Then the obtained result offer the correct response with the new input to generate predictions for the known information. The objective of our proposed system is to train ML algorithm in order to classify the different hand gesture images such as palm, fist. This method is also using deep learning and Tensor flow frame work.

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Word Sense Disambiguation System for Information Retrieval in Telugu Language

Neeraja Koppula, J. Pradeep Kumar, Koppula Srinivas Rao & G. Kiran Kumar

Conference paper | First Online: 03 August 2021

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Abstract

Nowadays, In Natural Language Processing (NLP), using artificial intelligence is a open challenge. Word Sense Disambiguation (WSD) is a sub field of artificial intelligence. In this research paper, WSD system is developed and validated for regional Telugu language. Many Natural Languages are having many ambiguous words. The word having more than one sense is known as ambiguous word or polysemy word. Word Sense Disambiguation is termed as the methodology of finding the appropriate sense of the

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Multi-threading image processing in single-core and multi-core CPU using R language

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E. Ramalakshmi ; Neeharika Kompala   All Authors

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Abstract:
R language executes its program on a one core CPU by default, using image processing. R language requires gigantic amount of calculations which are all processed by one core itself. When there is a need to use multiple core present in our platform, special packages in R language are used and executed. Image processing requires a large number of resources and processing all running simultaneously, and all the calculations are majorly done with the help of matrix pixels. In order to see how single-core and Multi-core systems affect the efficiency of image processing algorithms we execute codes on multiple platforms with varying number of codes along with varying sizes of the image. Also we use the concept of threading, and performing the same function both as a single thread process and a Multi thread process to check its efficiency. An increase on the performance as a whole can be observed when we change the number of codes, size of images and also as we choose to implement thread concepts.

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Object classification using SIFT algorithm and transformation techniques	https://link.springer.com/chapter/10.1007/978-981-13-0617-4_40/cover/
Probabilistic Analysis of Partial Discharge in Power Transformer due to the Presence of Spherical Particle	https://ieeexplore.ieee.org/document/8389661
A solution to the Multi-objective Optimization Problem with FACTS devices using NSHCSA including practical constraints	https://ieeexplore.ieee.org/document/8392190

Multi-objective OPF Problem Analysis with Practical Constraints in the Presence of FACTS Devices using NSHCSA	https://link.springer.com/chapter/10.1007/978-981-13-1135-2_32
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Word Sense Disambiguation System for Information Retrieval in Telugu Language	https://link.springer.com/book/10.1007/978-981-16-4435-1
Multi-threading image processing in single-core and multi-core CPU using R language	https://ieeexplore.ieee.org/document/8117873