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Paper Title: A Reduced Latency Architecture for Obtaining High System Performance

Abstract: Microprocessor performance has improved rapidly these years. In contrast, memory latencies and bandwidths have improved little. The result is that the memory access time has become a bottleneck which limits the system performance. As the speed of fetching data from memories is not able to match up with speed of processors. So there is the need for a fast memory controller. The responsibility of the controller is to match the speeds of the processor on one side and memory on the other so that the communication can take place seamlessly. Here we have built a memory controller which is specifically targeted for SDRAM. Certain features were included in the design which could increase the overall efficiency of the controller, such as, searching the internal memory of the controller for the requested data for the most recently used data, instead of going to the Memory to fetch it. The memory controller is designed which compatible with Advanced High-performance Bus (AHB) which is a new generation of AMBA bus. The AHB is for high-performance, high clock frequency system modules. The AHB acts as the high-performance system backbone bus. AHB supports the efficient connection of processors, on-chip memories and off-chip external memory interfaces with low-power peripherals.

Keywords: SDRAM, Memory controller, AMBA, FPGA, Xilinx, Modelsim.

References:

Paper Title: Design and Development of Can Sniffer

Abstract: Controller Area Network (CAN) is used extensively in automotive applications, with in excess of 400 million CAN enabled microcontrollers manufactured each year. CAN messages could be calculated and hence guarantees provided that message response times would not exceed their deadlines. This seminal research has been cited in over 200 subsequent papers and transferred to industry in the form of commercial CAN schedulability analysis tools. These tools have been used by a large number of major automotive manufacturers in the design of vehicle networks for a wide range of cars, millions of which have been manufactured over the last 8 years.

This paper shows that the original schedulability analysis given for CAN messages is flawed. It may provide guarantees for messages that will in fact miss their deadlines in the worst-case. This paper provides revised analysis resolving the problems with the original approach. Further, it highlights that the priority assignment policy, previously claimed to be optimal for CAN, is not in fact optimal and cites a method of obtaining an optimal priority ordering that is applicable to CAN. The paper discusses the possible impact on commercial CAN systems designed and developed using flawed schedulability analysis and makes recommendations for the revision of CAN schedulability analysis tools. The CAN Sniffer Tool is a simple to use low cost CAN bus monitor which can be used to develop and debug a high speed CAN network. The tool supports CAN 2.0b and ISO11898-2 and a broad range of functions which allow it to be used across various market segments including automotive, industrial, medical and marine. The toolkit comes with all the hardware and software required to connect a CAN network to a PC. In CAN bus, the two CAN channels can send/receive CAN messages either with extended or standard ID. All messages received by the CAN interface are sent via UART to the serial port of PC. On the PC the CAN-messages get collected and ordered by CAN-ID. In CAN the communication is done in two-wire, the CAN sniffer can receives the messages based on arbitration process.

Keywords: CAN, UART, CAN-ID, PC.

References:

Paper Title: A Survey of PAPR Reduction Techniques in LTE-OFDM System

Authors: Leman Dewangan, Mangal Singh, Neelam Dewangan
Abstract: Orthogonal Frequency Division Multiplexing (OFDM) is one of the most promising technique for today’s wireless broadband communication systems. 3GPP’s LTE was the first to adopt OFDM as its downlink technique. One of the major disadvantages is high peak-to-average power ratio (PAPR). In this paper various PAPR Reduction Techniques are discussed along with their advantages, disadvantages and improvements done so far. Techniques like clipping, Companding, Selective Mapping (SLM), Interleaving, Tone Reservation (TR), Tone Injection (TI), Partial Transmit Sequence (PTS), etc.

Keywords: OFDM, LTE, PAPR

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Authors: S. Ramya, T. Manokaran

Paper Title: Analysis and Design of Multi Input DC–DC Converter for Integrated Wind PV Cell Renewable Energy Generated System

Abstract: The objective of this paper is to propose a multi-input power converter for the hybrid system in order to simplify the power system and reduce the cost. The proposed converter interfaces two unidirectional input ports and a bidirectional port for storage element in a unified structure. It also utilizes four power switches that are controlled independently with four different duty ratios. The renewable power system hybridizes PV and Wind as main source & Battery Power for backup energy source. Three different power operation modes are defined for the converter based on utilization state of the battery as follows: 1) An operation type wherein power is delivered to load from hybrid renewable energy sources; 2) A single type wherein only one renewable energy source supplies power to the load with battery discharging; 3) An operation type wherein power is delivered to load from renewable sources along with battery charging. A simple and cost effective control with DC-DC converter is used for maximum power point tracking (MPPT) and hence maximum power is extracted from the source. The integration of the hybrid renewable power system is implemented and simulated using MATLAB/SIMULINK.

Keywords: Photovoltaic (PV)/Wind/Battery sources, hybrid power system, State Of Charge(SOC), Multi input power converter, Maximum Power Point Tracking (MPPT)

References:
Authors: Senthil Ragavan Valayapalayam Kittusamy, Venkatesh Chakrapani

Paper Title: Extraction of Expressions from Face Images using Neuro Fuzzy Approach

Abstract: Body language is a form of communication between human beings. Facial expressions are a form of nonverbal communication. Facial expressions can often communicate a person's mood than a word. Here, the authors extract the facial features from facial points. Extracted feature points are tracked using a cross-correlation based optical flow to extract feature vectors. These vectors are used to categorize expressions, using RBF neural networks and Fuzzy Inference System. Recognition results from two classifiers are compared with each other.

Keywords: Facial Expression, FIS, Neuro Fuzzy, RBF

References:

Authors: Devendra Thakore, Torana Kamble

Paper Title: Application of Genetic Algorithm in Software Security

Abstract: Assigning access specifier is not an easy task as it decides over all security of any software .Though there are many metrics tools available in a market to measure the security at early stage. But in this case assignment of access specifier is totally based on the human judgment and understanding .Objective of proposed tool is to generate all possible solutions by applying Genetic Algorithm (GA). Our Secure Coupling Measurement Tool (SCMT) uses coupling, feature of OO design to determine the security at design level. It Takes input as a UML class diagram with basic constraints and generates alternate solutions i.e. combinations. Tool also provides metrics at code level to compute the security at code level. Result of both the metrics give proof of secure design with the help of spider chart as well as scope to change the design

Keywords: Coupling, Genetic Algorithm, Quality, Security, Software Metrics.

References:
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Authors: Sneh S. Shinde, P. R. Devale

Paper Title: Automated Entity Alias Evocation from Web

Abstract: Identifying the correct reference to an entity among a list of references is required in lots of works such as information retrieval, sentiment analysis, person name disambiguation as well as in biomedical fields. More
previous work had been done on solving lexical ambiguity here we proposed a method that is based on referential ambiguity. In this paper we proposed a method which is based on referential ambiguity to extract correct alias for a given name. Given a person name and/or with context data such as location, organization retrieves top K snippets and depth up to level two from a web search engine. With the help of Lexical pattern extract candidate aliases. As to find correct alias from a list of aliases we used n-depth crawling method. This method is useful to improve the precision and minimize the recall than the previous baseline method.

Keywords:  Web mining, web text analysis, text mining, n-depth crawling.

References:

Authors:  G. Pydiraju, M. Daivaasirvadam

Paper Title:  Sensorless Speed Control of Induction Motor Using MRAS

Abstract: In order to implement the vector control technique, the motor speed information is required. Tachogenerators, resolvers or incremental encoders are used to detect the speed. These sensors require careful mounting and alignment and special attention is required with electrical noises. Speed sensor needs additional space for mounting and maintenance and hence increases the cost and the size of the drive system. These problems are eliminated by speed sensorless vector control by using model reference adaptive system. Model reference adaptive system is a speed estimation method having two models namely reference and adaptive model. The error between two models estimates induction motor speed. This project proposes a Model Reference Adaptive System (MRAS) for estimation of speed of induction motor. An Induction motor is developed in stationary reference frame and Space Vector Pulse Width Modulation (SVPWM) is used for inverter design. PI controllers are designed controlling purpose. It has good tracking and attains steady state response very quickly which is shown in simulation results by using MATLAB/SIMULINK.

Keywords: Sensorless vector control, Model Reference Adaptive System (MRAS), Induction motor, stationary reference frame, Speed estimation

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Authors:  Satish R. Billewar, D. Henry Babu

Paper Title:  Approach to Improve Quality of E-Commerce

Abstract: E-Commerce is the purpose of Internet and the web to conduct business. E-Commerce is the future of the businesses of 21st Century. But E-Commerce companies are facing big problems at the time of providing products to customers online. The problem is not about the quality of the products, but the information is not reaching to the customers easily and whatever information is available on the web sites of the companies that are not satisfying the traditional product purchase habit of the customer. Now the need arise to redefine the quality in the applications of the web sites as well as the implementation issues that become hurdle in E-Commerce business activities. The global and Indian E-Commerce sales statistics shows the internet penetration worldwide and E-Commerce Users World Statistics to address the reasons why the people have not accepted E-Commerce in India. The study addresses to various quality issues of the web sites which are neglected to fulfill the requirements of the customers, and propose Total Quality Management (TQM) implementation as the best solution to sort out the issues.

Keywords: Commerce; E-Commerce Applications; Total Quality Management (TQM); Quality issues

References:

8. 31-35

9. 36-39
A SVPWM based, 3 level phase voltages are generated in all states and first inverter is clamped to corresponding active state. One inverter output is superimposed on the other inverter, resulting a 3-level line voltage waveform for the induction motor. The imaginary switching time concept is used in the proposed method. It does not require any procedures for calculation of regions of space voltage vector and angle calculations sector identification. The imaginary switching time greatly reduces the complexity of the algorithm. Simulation studies have been carried out for the proposed scheme and results are presented.

**Keywords:** DTC, Dual Inverter, NSHC Algorithm, OEWIM, SVPWM.

**References:**


**Authors:**

G.Satheesh, T. Bramhananda Reddy, Ch. Sai Babu

**Paper Title:**

SVPWM based DTC of Three Level Voltage fed Open End Winding Induction Motor

**Abstract:** A Space Vector Pulse Width Modulation (SVPWM) based Direct Torque Control (DTC) of Dual Inverter Fed Open End Winding Induction Motor is analyzed in this paper. A SVPWM based, 3 level phase voltages are generated with two individual two level inverters. In this method, first inverter pulses are generated normally and second inverter pulses are generated with 180 degrees phase shift. But at a particular state of switching first inverter is switched in all states and second inverter is clamped to that active state. In the next state of switching the second inverter is switched in all states and first inverter is clamped to corresponding active state. One inverter output is superimposed on the other inverter, resulting a 3-level line voltage waveform for the induction motor. The imaginary switching time concept is used in the proposed method. It does not require any procedures for calculation of regions of space voltage vector and angle calculations sector identification. The imaginary switching time greatly reduces the complexity of the algorithm. Simulation studies have been carried out for the proposed scheme and results are presented.
### Paper Title: A Study on Modeling of MIMO Channel by Using Different Neural Network Structures

**Abstract:** Recognition of Radio Channel (channel Parameters) is one of Main Challenges in Signal Transformation, and has important role in cognitive radio approach. Goal of this paper is “Channel modeling” to estimate coefficients of transmission functions affected on data being transformed in the channel. We use Multilayer perceptron (MLP) Neural Network with Back-propagation learning algorithm, block-structured Neural Network with Least Squares (LS) method (cost function) and a multilayer neural network with multiple back-propagation (MBP) learning algorithm for error estimation. These networks will be trained with received signals to be compatible with channel, then give us an estimation of these coefficients. Simulation will show that this MBP method is better than the other two methods in error estimation. It has good performance and also consume less execution time. Then, we will use this network for estimating coefficients of non-linear transmission functions of actual radio channel.

**Keywords:** Cognitive Radio, Channel Modeling, Least Squares, Multiple Back-propagation (MBP), Neural Network, Transmission function.

**References:**

### Paper Title: Some Rules to Transform Activity Diagrams into Colored Petri Nets

**Abstract:** This paper presents a set of rules that allows software engineers to transform the behavior described by a UML 2.0 Activity Diagram (AD) into a Colored Petri Net (CPN). ADs in UML 2.0 are much richer than in UML 1.x, namely by allowing several traces to be combined in a unique diagram, using high-level operators over interactions. The main purpose of the transformation to Petri nets is to use the theoretical results in the Petri nets domain to analyze the equivalent Petri nets and infer properties of the original workflow. Thus, non-technical stakeholders are able to discuss and validate the captured requirements. The usage of this model is an important topic, since it permits the user to discuss the system behavior using the problem domain language. A small control application from industry is used to show the applicability of the suggested rules.

**Keywords:** Activity Diagram, Petri Nets, Colored Petri Nets, Verification and Validation.

**References:**
Authors: V. B. Katariya, Y. N. Makwana, P. A. Goswami

Paper Title: A Review on Implementation of Automatic Movement Controlled Using Gesture Recognition

Abstract: Nowadays, computer interaction is mostly done using dedicated devices. Abundant amount of input devices are used to interact with the computer world or more precisely saying to digital world and very less through gestures made by body movements. Concepts of assistive technology are one of them used for controlling the input from mouse movements, like by detecting the eye, hand, face etc movements of a user with the help of eye tracking system, hand gestures through wearable devices, etc. Our focus is in moving mouse cursor on the screen without using any hardware which is used very often now-a-days i.e. mouse. We use the newly born technology for this purpose. We implement computer mouse movement through finger by image processing using latest Technology which gets processed in MATLAB without and with using gesture recognition.

Keywords: Color Recognition, camera, Image Processing, Keyboard, MATLAB, Mouse

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Authors: Uma Shankar Modani, Gajanand Jagrawal

Paper Title: A survey on Application of Ferroelectric Materials for Fabrication of Microstrip Patch Antennas

Abstract: Ferroelectric materials (FEM’s) are very attractive because their dielectric constant can be modulated under the effect of an externally applied electric field perpendicularly to the direction of propagation of a signal. In this paper, classification, properties and application of ferroelectric material for the fabrication of microstrip patch antennas is discussed.

Keywords: Ferroelectric materials and Microstrip patch antenna.

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