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Authors: Nirali Shah, Vinaya Sawant

Paper Title: A Study on Informatica Tool for Extract, Transform and Load processes of Data Warehouse

Abstract: The relational database enabled access to the valuable information contained deep within data. Still improvements were needed for optimized complex reporting or analytical needs. This lead to the revolution of Data warehouse which would store current and historical data that could be used for creating analytical reports and analyzing hidden trends. As data is growing, companies will be required to adopt data warehouses so as to manage these huge stacks of data and hence Informatica can help them in building data warehouse. This paper focuses on ETL process of data warehouse and how Informatica is used for these processes using a case study on TAB Taxi to understand the working of this tool methodically. Informatica is a powerful tool for extracting the source data and loading it into the target after applying the required transformation.

1. Keywords: Data warehouse, ETL, Informatica, Extract, Transform, Load etc.

References:
3. Jiawei Han, MichelineKamber and Jian Pei book on “Data Mining: Concepts and Techniques, Third Edition (The Morgan Kaufmann Series in Data Management Systems)” published by Morgan Kaufmann.

Authors: Rittu Angu, R. K. Mehta

Paper Title: Robust Stabilization of AVR Loop through Extended Reduced-Order Observer

Abstract: An Extended Reduced Order Observer (EROO) based design approach has been presented for an Automatic Voltage Regulation (AVR) loop of the synchronous generator. The design approach utilizes the full state feedback to stabilize the AVR loop in the face of parameter uncertainty. The EROO-based design approach is capable of robust trajectory tracking in presence of parameter uncertainty and disturbances due to load demand changes. The design ensures specified stability margins at different speeds of response. An illustrative example has been provided to demonstrate the effectiveness of the methodology.

Keywords: Automatic voltage regulator, Control area, extended reduced-order state observer, augmented system, MATLAB simulation.

References:

Authors: G. V. Satpute, P. M. Dighe, V. M. Harpale

Paper Title: Study of Sensory Parameters, Typical Macronutrients and Micronutrients of Dehydrated Cabbage using Cabinet Solar Dryer and Open Sun Drying Methods

Abstract: Open sun drying of food product is the traditional method since ancient days. The recent technologies like vacuum drying, steam drying, spray drying, microwave drying etc. are used for drying food materials, need fuel or electricity making the procedure of drying costlier. The alternative to these is the solar dryer. Cabinet Solar Dryer is one of the dryers developed. It is cheaper, easy to handle and effective means for drying because using it solar energy can be utilized meaningfully. Solar energy being the renewable source of energy is abundant, available at free of cost, clean, pollution free and lasting for millions of years in future. In solar dryer safe and appropriate drying of food product from nutrition point of view can be done. Also the product is free from contamination. These are the advantages over open sun drying. In the present study, sensory parameters as colour, flavour, taste & texture, macronutrients like energy value, protein, carbohydrate, fat and dietary fibre as well as micronutrients (minerals and vitamins) like potassium, phosphorous, magnesium, calcium, iron and vitamin C were estimated in the sample of
cabbage in both the methods, solar dryer as well as open sun drying. The results are noticeable.

**Keywords:** Fossil fuels, Energy Crisis, Insolation, Photothermal, Solar Dryer, Macronutrients, Micronutrients, Diet, Adequate Intake (AI), and Recommended Dietary Allowance (RDA).

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**Authors:** Kamatchi Pillai

**Paper Title:** Conceptual Model and Simulation Results for Section-Based Digital Habitat Ecosystem Architecture in Built Environments

**Abstract:** Digital Ecosystem (DE) is the Information and Communication Technology (ICT) system, which includes both an open and loosely coupled network of self-organising ICT nodes and links. The advancement of the DE technology, an emerging research area, promises new approaches for controlling, monitoring, and managing the use and reuse of resources in built-up environments. However, the use of the DE technology is currently most widely utilised in business enterprise networks, and many research and development challenges exist and must be addressed before this technology can be scaled to and applied in built environments. The main objective in this research is therefore to investigate and build a Digital Habitat Ecosystem Architecture (DHEA) that can integrate all the existing smart devices available in the home environment. Furthermore, it will monitor and control the use of the vital resources (water, electricity) in built up environments. The specific objective of this proposed research is to address the shortcomings of the wireless communication networks and to standardize the devices into a common platform. This paper aims to outline the significance of the DHEA, and the core DHEA devices. Emphasis will be on the discussion of the Element and Section-based models of a proposed DHEA model. Conceptual model and simulation results will be presented with simple examples such as a lighting system model in Simulink.

**Keywords:** Conceptual Model, Digital Ecosystem, Digital Habitat Ecosystem, Sensor Networks, Simulation, Simulink, Web-based Architecture, Wireless Communication.

4. 20-29
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Authors:
Ganashree T. S., Josephine Prem Kumar

Paper Title:
Estimation based Error Reduction Scheme (EBERS) for Scalable HEVC to Support Real Time Video Communication in Wireless AD-HOC Networks

Abstract:
In any network, any video stream is transmitted from one node to another. In the process various video information may be lost due to the channel errors or any other disturbance coming in the channel between the nodes. This paper presents an encoder based prediction model to know the impact of packet loss during video transmission in wireless network. Here we are implementing Scalable high efficiency video coding (SHVC) for video streaming. SHVC further offers a scalable format that can be readily adapted to meet network conditions or terminal capabilities. We implement and evaluate spatial, temporal, and quality scalability schemes for SHVC on a wireless network. Emerging adaptive streaming technologies will further increase the number of required representations due to additional adaptation points. This paper provides the benefits of adopting the Adaptive Streaming over the Scalable Video Coding (SVC) for spreading video streaming over the Internet. It describes how due to the adoption of SVC network resources are more efficiently used, and thus increasing the quality of service (QoS).

Keywords: SHVC, SVC, QOS, Scalable, Emerging, Adaptive, Streaming, Transmission, wireless network.

References:

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V. Jaya Vaishnavi, A. Srinivasa Reddy

Paper Title:
Multi-Objective Economic Emission Dispatch using Backtracking Search Optimization Algorithm

Abstract:
To provide reliable and uninterrupted electrical supply to consumers, electrical utilities face many economic and technical problems in operation, planning and control of power systems. Most of the power system optimization problems like economic load dispatch include complex and non-linear characteristics with heavy inequality and inequality constraints. Cost minimization of power generation is one of the most important power system problems. In this project, an attempt is made to minimize the cost for generation in a power system. The aim of this project is to find the optimum set of power to be generated for a given loading conditions. Equality constraint which is the relation between power generated, losses and power demand is taken into account. In this thesis, transmission losses have not been taken. Inequality constraints such as the maximum and minimum generation values for each of the generators are also considered along with valve point loading. This paper introduces backtracking search optimization algorithm (BSA), a new evolutionary algorithm (EA) for solving real-valued numerical optimization problems. EA’s are popular stochastic search algorithms that are widely used to solve non-linear, non-differentiable and complex numerical optimization problems. Unlike many search algorithms, BSA has a single control parameter. BSA has a simple structure that is effective, fast and capable of solving multi-modal problems and that enables it to easily adapt to different numerical optimization problems. BSA’s strategy for generating a trial population includes two new crossover and mutation operators. BSA strategies for generating trial populations and controlling the amplitude of the search-direction matrix and search space boundaries give it very powerful
exploration and exploitation capabilities. In particular BSA possesses a memory in which it stores a population from a randomly chosen previous generation for use in generating the search-direction matrix. Thus BSA’s memory allows it to take advantage of experiences gained from previous generations when it generates a trail preparation. The proposed algorithm is applied to EED problem. The purpose of EED is to obtain the optimal amount of generated power for the generating unit in the system by simultaneously minimizing the fuel and emission costs. To demonstrate the effectiveness of this method BSA have been performed on 6-unit system with valve point loading effect to obtain lesser fuel and emission costs.

**Keywords:** Economic Dispatch, Emission Dispatch, Multi-objective optimization, Backtracking search optimization algorithm, Trade-off curve

**References:**
Title: BYOD App Preferences of the City Hall of San Fernando

Abstract: This is a study designed to determine the suitability and willingness of the City of San Fernando to go BYOD and is based on previous study of the researcher entitled “BYOD: Connectivity Option for Alaminos Municipal Hall”. This study was enhanced to determine if San Fernando Municipal Hall is ready to implement BYOD with all the advantages it offers in terms of mobility, cost, technology familiarity, flexibility, and agility; and if they if they are willing to adopt this innovation in their workplace. The previous findings of the study trigger another query whether other municipalities are open to this innovation. Thus, the research came across with a follow up study but this time it sought to determine the suitability and willingness of the City of San Fernando to go BYOD. This research adopts the same methodology and questionnaire from the previous study. Previous research did not tackle on existing IT literacy and capability of the municipality. But for this research, specifically it aims to answer the following questions: (1) What is the existing IT literacy and capability; (2) What are the factors that the municipality will consider in implementing BYOD; (3) What are the preferred BYO devices in terms of a. cost, b. specification, c. features, and d. technical support; (4) What are the potential benefits of using BYOD in the workplace compared to traditional IT; and (5) What is the significant difference between BYOD and traditional IT as perceived by employees. The findings are aligned with the previous study made by the researcher. This means perception of both cities is the same in terms of BYOD adoption and connectivity options. Based on the findings, security is the most important factor that needs to consider in the adoption of BYOD as represented by the 100% perception of the respondents both in San Fernando and Alaminos. There are many criteria wherein the two municipalities were different in terms of frequency and percentage such as Laptop as device issued by employer (Alaminos – 100% while San Fernando – 90%); perception if company ensure they comply with specific guidelines in using their personal device(s) for work purposes (e.g., no personal photos, limited app downloads) (Alaminos – 66% while San Fernando – 60%); Lastly, based from the t-test output there is significant difference between BYOD and Traditional IT along mobility, cost, technology familiarity, flexibility, and agility.

Keywords: BYOD, Consumerization of IT, La Union, LGU (Local Government Unit)

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