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Paper Title: The Effect of the Canopy of Scots Pines (P. Sylvesteris) in Positioning Accuracy Utilizing the Network of Permanent GPS Reference Stations of the Hellenic Positioning System (HEPOS)

Abstract: The creation of Permanent Reference Stations and the implementation of network positioning techniques can significantly improve the positioning accuracy in forested conditions. The Hellenic Positioning System (HEPOS) is the first Network of Permanent GPS Reference Stations in Greece. The aim of the paper is to test the positioning accuracy within a conifer forest of Scots pines (Pinus sylvestris) using HEPOS system and an implementation of four Real Time (RTK) GPS techniques: the Virtual Reference Stations (VRS), the Master-Auxiliary Concept (MAC) technique, the Single-Base technique and the Network-based DGPS technique. In the study area, pines with normal growth and pines with stunted growth and bushy appearance were found. So three measurement testing courses were established: first under closed canopy of isolated pines with busy appearance, second above canopy of isolated pines with busy appearance (open sky) and finally under closed canopy of pines with normal growth, that are forest cluster with high canopy density. The results were obtained by comparing the measurements of points as recorded by the GPS receiver Leica GS09 GNSS with the measurements of points as recorded by the total station Leica TCR 407, whose measurements are taken as “true values”. The measurements were carried out in the national forest of Lailia, Serres, Macedonia, Northern Greece.

Keywords: Permanent reference station, VRS, MAC, Single Base, Network DGPS.

References:

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and bandwidth of transmission get reduce. Recently the research on image compression techniques inspired us to propose Hadamard-Coiflets transform with arithmetic coding to increase the visual quality of image. The improved Hadamard-Coiflets transform with arithmetic coding is good techniques of compression and can able to give higher PSNR value as compared to various existing methods. Here the Hadamard-Coiflets transform is appalice first and then on each block of the low frequency subband and split all values from each transformed block followed by applying arithmetic coding for image compression.

Keywords: Image Compression, Hadamard-Coiflets Transform and Arithmetic Coding.

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Authors: V. Balaji, L. Rajaji

Paper Title: ARX-Model based Model Predictive Control of a pH Process using LabVIEW

Abstract: ARX models, is a suitable model for linear control implementations. The parameter estimation problem is convex and easily handled for both SISO and MIMO system. This paper deals with a novel formulation of ARX Model –Predictive control for the pH Process in a Continuous Stirrer Tank Reactor (CSTR). An illustrative simulation is conducted to compare the proposed model based controller with the conventional Proportional – Integral – Derivative(PID) controller for the pH purification process. The simulation results confirm that MPC is one of the best possibilities for successful control for pH process.

Keywords: pH Purification, Model Predictive Control, PID controller, CSTR, LabVIEW

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Paper Title: Hybrid Artificial Bee Colony Algorithm and Semi Supervised Learning Prediction Model for the Risk of Cardiovascular Disease in Type-2 Diabetic Patients

Abstract: Cardiovascular disease (CVD) factor is one of the important causes of mortality among diabetes patients. Statistics shows that more than 22% of people with type 2 diabetes mellitus suffer from CVD and which in turn leads to cardiovascular disease. But still some of the works doesn’t mainly focus on the semisupervised learning methods.
with feature selection methods to enhance the prediction accuracy of the classification methods. The aim of this research was to identify significant CVD factors influencing type 2 diabetes controls to improve prediction accuracy. In proposed methods the preprocessing and dimensionality reduction of the patients records is done by using Kullback Leiber Divergence(KLD) —Principal component analysis (PCA) ,then attribute values measurement is completed by using kernel density estimation (KDE) which measures the attributes values based on probability mass function with Gaussian kernel function, feature selection is performed by using artificial bee colony with differential evolution (ABC-DE). Hybrid prediction model Improved Fuzzy C Means (IFCM) clustering algorithm aimed at validating chosen class label of given data and subsequently applying semisupervised Modified Self-Organizing Feature Map Neural Network (MSOFMNN) classification algorithm to the result set. The proposed method examines the behavioral factors that contribute to CVD risk factors among those with type 2 diabetes (T2D) with higher prediction accuracy, less error rate.

**Keywords:** Artificial bee colony (ABC), Classification, Hybrid Prediction Model, Kernel density estimation (KDE), Modified Self-Organizing Feature Map Neural Network (MSOFMNN).

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**Paper Title:** Innovative Approaches to Cost Effective Housing: A Case Study of Kudremala Slum, Mysore

**Abstract:** In developing countries like India, the number of slums and squatter settlements are increasing particularly in large cities. Mysore City one of the large cities in India and there are large number of slums and squatter settlements. Kudremala slum is one of the squatter settlements and the housing and development of infrastructure was not addressed by the Karnataka Slum Clearance and Improvement Board due to its land tenure problem for quite a long time. Kudremala had 120 households when the project was initiated. The innovative housing project was initiated by the local community jointly with the Non-government organisation by mobilising funds from international funding agency SELVIP and government agencies. The paper presents the processes of innovative approaches to cost effective housing in Kudremala slum through partnership of CBO and NGO, resource mobilisation efforts and use of cost effective technology including the self-help techniques in promoting housing and
Keywords: Community Based Organisation, Self-help Housing, Nongovernmental Organisation, Land Tenure, Cost-effective Technology.

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Paper Title: Profit based Unit Commitment using Improved Pre-Prepared Demand (IPPD) Table and Memory Management Algorithm (MMA)

Abstract: In this paper, Improved Pre-prepared Power Demand (IPPD) table and Memory management algorithm is used to solve Profit Based Unit Commitment (PBUC) problem. In conventional market, Unit commitment (UC) is the process of determining the On/Off status of the generating unit to meet forecasted load by satisfying certain operating constraints that minimize the operating cost. In restructured power market, unit commitment involves commitment of generating unit of an Individual Generation company (GENCO) for maximization of his profit rather than satisfying the power demand of his consumer. In this proposed method, PBUC problem is solved in two steps. In first step unit commitment scheduling is done by IPPD table and then the problem of fuel cost and revenue function is done by Memory Management Algorithm. The IPPD table gives the information of committed unit for any predicted power demand and information about forecasted price to reduce complexity in the problem during calculation. Memory management algorithm uses Best fit and Worst bit allocation for scheduling the generator in order to receive maximum profit by considering power and reserve generation. This approach has been tested on a 3 unit system using MATLAB and the simulation result is compared with the result of previous published method obtained by other optimizing technique.

Keywords: Deregulation Improved Pre-prepared Power demand (IPPD) table, Generation Company (GENCO), Memory Management Algorithm (MMA), and Profit Based Unit Commitment (PBUC).

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Paper Title: An End-to-End Video Transmission System over Multimedia Wireless Sensor Networks

Abstract: Multimedia transmission requires timely delivery for its real time application. Multimedia wireless sensors have special characteristics that make them different from traditional Wireless sensors. In this paper we propose an End-to-End Video streaming system over wireless multimedia sensor networks. First part of this paper explains the video encoding and the second part contains the route discovery along with Low Density Parity Check based forward error correction scheme to ensure error free data delivery. The goal of the proposed system is to provide high
quality video with maximum signal to noise ratio and minimum mean square error. The system is fully implemented in MATLAB.

**Keywords:** Wireless multimedia sensor network, video encoding, Peak signal to noise ratio, Low density parity check, Mean square error.

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**Paper Title:** Seismic Vulnerability Assessment of Existing Buildings: It’s Importance

**Abstract:** Earthquake induced damage has been increased over the few years. Gujarat (2001), Sumattra (2004), Pakistan (2005) and Haiti (2010) are the examples of devastating damage due to earthquake. Collapse of non – engineered and engineered buildings and structures is the chief contributor to the loss of lives and injuries to people. Vulnerability Atlas of India states that there are about 11 million seismically vulnerable houses in Seismic Zone - V , while the corresponding figure for Seismic Zone is 50 million. In all, there are about 80 million building units in India, which are vulnerable, and pose unprecedented risk, if earthquake strikes. However, severe damage was observed in a relatively small percentage of existing buildings even after damaging earthquakes in the World. Identifying such vulnerable buildings to future earthquake is important. To identify such buildings, three levels of seismic vulnerability assessment methods starting from simple to sophisticated procedure, (a) Rapid Visual Screening (RVS) , (b) Simplified Vulnerability Assessment (SVA) and (c) Detailed Vulnerability Assessment (DVA) can be carried out according to the problems detected in the building.

**Keywords:** Collapse, damage, seismic zone, structures, vulnerable

**References:**


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Abstract: This paper investigates the ability of a least-squares support vector machine (LS-SVM) model to improve the accuracy of streamflow forecasting. Cross-validation and grid-search methods are used to automatically determine the LS-SVM parameters in the forecasting process. To assess the effectiveness of this model, streamflow records from Geological Survey (USGS) gaging station 1652500 on Four Mile Run of the Potomac River, were used as case studies. The performance of the LS-SVM model is compared with the recurrent neural networks model trained by Levenberg-Marquardt backpropagation algorithm. The results of the comparison indicate that the LS-SVM model is a useful tool and a promising new method for streamflow forecasting.

Keywords: Water Quantity Prediction, Least Squares Support Vector Machine.

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Authors: R. Suganthi, P. Kamalakannan

Paper Title: Synthesizing Model for Clustering Frequent Data Items in Multi-Database

Abstract: Mainly, most of the large organizations have numerous databases and they do process and transact over the multiple branch database. The important issue of the multi database is selecting the frequent items from various branch databases and forwarding the items to head quarters to take the decision among all kinds of patterns. Here global decision is important role in head quarter level and some steps are followed to take critical decision in top level. First step is synthesizing high frequency item set based on local item set. Second step is to measure the association among various items listed under high frequency. And the accuracy level of data set is improved by using the synthesizing and clustering algorithm.

Keywords: Multi database, Synthesizing patterns, local pattern analysis, patterns

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