International Conference on Smart Computing and Communication (SmartTech-2017)

Selected Abstracts:

Title:

Non-destructive foreign element examining in rice quality inspection

Mihir N. Dudhrejia
Ph.D Scholar, Gujarat Technological University – Chandkheda Ahmedabad, India. mihir.dudhrejia@gmail.com

Dr. Chetan B. Bhatt
Principal,
Government Engineering College
Gandhinagar, India
Chetan_bhatt@yahoo.com

Abstract:

For all commodity crops quality is very important factor. For any crop it is required to do quality analysis for sorting good products. While analysis of any grain sample it is required to identify non-quality elements. If non-quality elements are presents in grain then products made from it will be low in price and might be dangerous to health. However it is tedious, but it is very important to perform the individual kernel's qualitative analysis for finding non family substance in grain sample. Analyzing the grain sample manually is more time consuming and complicated process, and there are high chances of errors with subjectivity of human perception. To get uniform standard precision quality, machine based techniques are having great significance. With that we can reproduce the same qualitative result efficiency again and again. Authentication of grain sample is also done using advanced biology-based techniques focusing on DNA as the target analysis element. Image processing techniques has proven solution for many problems, the reason being with this approach mainly actual product be intact. An attempt is made to investigate techniques used for the grain quality analysis. The main attempt is made to investigate foreign particles in grain sample. A foreign particle is any element exists in grain sample which is not of interest. It might be piece of stone, leaf, send; it might be the seeds which are not having predefined quality (i.e. immature or damaged). Non-destructive image based grain analysis technique is used for recognizing non-quality elements from grain sample. We have found different image processing approaches for identification of foreign element and made comparisons of them. In the current review, we made an attempt to summarize the existing methods of adulteration detection and case study is provided for measuring rice (Oryza sativa L) quality with Basmati rice.

Keywords:

Title:

WBSC: A Fast and Efficient Biological Data Compression Algorithm

Sanjeev Kumar, Suneeta Agarwal, Ranvijay
Depterment of CSED MNNIT Allahabad, Allahabad-21104

*Correspondence should be addressed to Sanjeev Kumar, Department of CSED, MNNIT Allahabad, Allahabad
Postal code: 211004; Tel: +919161292060 Email: skgcp86@gmail.com.

Abstract:

With the development of high throughput sequencing technology, massive amount of genomic data are generated every day. To efficiently handle these data for storage, processing and transmission, some specialized genomic data compression strategies are need of today. In this paper a hybrid approach based on substitution and statistics is proposed for genome compression (WBSC).WBSC can handle the genomic data files in raw forms as well as Fasta/Multi Fasta formats. WBSC is a loss less algorithm in which searching is possible without fully decompression. Experiments show that proposed algorithm (WBSC) outperform in comparison to other state of art algorithms in terms of compression ratio, compression time and decompression time.

Keywords:

Title:

Analysis and performance on medical dataset using mining techniques

Harshita Khangarot*, Avinav Baruah, Sarang Sambharia, Kavita Choudhary

Computer Science Department

JK Lakshmipat University, Jaipur, India
*Correspondence should be addressed to Harshita Khangarot, JKLU, Computer Science Department, Email: Harshitakhangarot@gmail.com.

Abstract:

Data is being constantly generating in almost every field, handling such huge amount of data has became a very typical task. Classification techniques are used to solve this problem at a great extent. In this paper, literature survey of various classification techniques used to analyze large data sets is done. Here, we are concentrating on analyzing facts based on data set of heart disease called arrhythmia (irregular heart-rate). Used data contains general details including EEG data. Decision tree is created for classification. The proposed data contains a very good accuracy with decision tree when compared with other techniques.

Keywords:

ECG, decision tree, accuracy, Rapid miner, K-NN.

Title:

Network Analysis of Disease-Diet Associations: A Healthcare Perspective

Rashmeet Toor
CSED, Thapar University
Patiala, Punjab
rtoor_phd16@thapar.edu

Inderveer Chana
CSED, Thapar University
Patiala, Punjab
inderveer@thapar.edu

Abstract:

Diets are major contributor towards the development and eradication of many diseases but the study of disease-diet relations is an arduous task. This is due to the complex interdependencies of diet to multiple diseases or a disease and its subtypes. A diet may be harmful for a disease but helpful for its subtype. Thus, there is a strong need for efficient and effective analysis of disease-diet data so that harmful or helpful diets for different diseases can be extracted. Computational methods like network visualization and analysis along with necessary tools need to be utilized for this purpose. This paper summarises various useful graph mining or network analysis techniques. It also describes the available databases for disease-diet associations and network analysis tools for analyzing complex networks. An efficient model is required to infer disease and diet associations from diverse datasets using network analysis within a machine learning framework. This paper presents a case study which shows the process of creating a network analysis model and then its usage for disease-diet associations. The model derived from the combination of these technologies will help to better understand the correlation between disease progress and dietary habits, ultimately leading to the notion of Smart Healthcare.

Keywords:

network analysis, graph mining, disease-diet associations, smart healthcare.

Title:

Understanding software defined networking – A study on the existing software defined networking technologies and its security impact

Nitheesh Murugan Kaliyamurthy
PhD Scholar, Amity Institute of Information Technology
Amity University
Jaipur, India
k.nitheesh.murugan@gmail.com

Dr. Swapnesh Taterh
Associate Professor, Amity Institute of Information Technology, Amity University
Jaipur, India
staterh@jpr.amity.edu

Abstract:

Software Defined Networking, the emerging technology is taking the network sector to a new variant. The existing networking sector completely focused on hardware infrastructure is now moving its control over software programming. Due to an exponential growth in the number of users and the quantity and quality of information handled over wires, there arises a great risk in coping up with the standards in the existing legacy networking models. Software Defined Networking paves a diversified platform identifying a feasible solution to the problem by centralization. Software Defined Networking provides a viable path in centralizing and managing the network resources in an "On Demand" Manner. This study is focused on the drawbacks of the existing technology and a fine grained introduction to Software Defined Networking. Further adding to the above topic, this study also passes over the current steps taken in the industrial sector in implementing Software Defined Networking. This study provides a walkthrough over the security features of Software Defined Networking, its advantages, limitations and further scope in identifying the loopholes in the security.

Keywords:

Software Defined Networking (SDN), Quality of Service (QoS), Transmission Control Protocol/ Internet Protocol (TCP/IP), Open Network Foundation (ONF), Control Plane, Data Plane, Spoofing, Distributed Denial of Service (DDoS), Tampering, Centralized Controllers, Intrusion Prevention.

Title:

Risk based ERP implementation framework for higher education institutions

Rajesh Subramanian1   Dr. Swapnesh Taterh2
1.   Research Scholar, Amity University Rajasthan
2.   Associate Professor, Amity University Rajasthan

Abstract:

Despite the difficulties, risk and failures, higher education institutions are continuously replacing/implementing ERP Systems to meet the demands of sector competition and expectation form the stakeholders. Many literatures claim that the ERP implementation is risky and challenging. Especially when HEIs are novice, it becomes important to mitigate the risk involved in ERP implementation for a successful implementation. So, it is important to understand and follow an implementation framework to reduce/avoid the implementation failures. This paper proposes a new risk based framework for ERP implementation in higher education.

Keywords:

Enterprise Resource Planning (ERP), ERP Implementation, Higher Education, Implementation framework, Implementation model.

Title:

Hybrid flower pollination algorithm for software clustering

Kawal Jeet
Department of Computer Science
D A V College,
Jalandhar, India
kawaljeet80@gmail.com

Renu Dhir, Paramvir Singh
Department of Computer Science and Engineering
Dr. B R Ambedkar National Institute of Technology,
Jalandhar, India

Abstract:

Well organized software systems are easy to implement, maintain, test and evolve. Software clustering is the process of organizing software entities into appropriate clusters with an aim to efficiently simplify complex software structure. In the past few years, search-based techniques have been widely used for software clustering. In this paper, application of search-based Flower Pollination Algorithm has been investigated for this purpose. The auxiliary archive based multi-objective formulation of Flower Pollination Algorithm, along with its hybrid with Genetic Algorithm are applied to cluster Android mobile applications as well as C, C++ and Java based desktop software. It is empirically and statistically validated that the hybrid of multi-objective Flower Pollination Algorithm with Genetic Algorithm outperforms the existing search-based Two-Archive, NSGA-II and Black Hole algorithm based approaches as far as software clustering is concerned.

Keywords:

Genetic Algorithm, Search-Based Software Clustering, Software Modularziation.

Title:

A Study and Analysis for Congestion Control Model using BBR in Wireless Networks Scenario

Girish Paliwal a*, Swapnesh Taterh a, Narendra Singh Yadav b

a Amity University Jaipur, Rajasthan
b JECRC University, Jaipur

Abstract:

Recent years, wireless network grow very rapidly mostly inside the homes. The number of home automation products and devices is connected with the wireless technique easily without wiring. These internet user expectations are much higher when they want to access the internet with high speed and minimum cost. It can be achieving by increasing the bandwidth or improving the congestion control algorithms. The many types of research based on the improved TCP congestion control algorithms. They have been building and improve TCP congestion control algorithm and proposed over different kinds of high-speed networks, get high throughput. Researcher searches the techniques to reduce the wireless user's data accessing delay from minutes to seconds. In this paper, we proposed a congestion control model based on the TCP BBR and TCP Reno and analysis it with respect to another congestion control algorithms. The congestion control algorithms are analyzed and study for the wireless network scenario and found it has impacted over another TCP congestion control algorithms.

Keywords:

RTT-Round Trip Time, Congestion Control Algorithms, TCP-Transmission Control Protocol, New Reno, Westwood, Cubic, BBR-Bottleneck Bandwidth Round Trip Propagation, WSN-Wireless Sensor Network.

Title:

Cross-Opposition Based Differential Evolution

Shweta Sharma
Department of Computer Science & Engineering
Amity School of Engineering & Technology
Jaipur, India
shweta_sharma0287@yahoo.com

Prof. Deepshikha Bhargava
Amity Institute of Information Technology
Jaipur, India
deepshikhabhargava@gmail.com

Abstract:

Differential Evolutionary (DE) Algorithms are always being the attention seeker for researchers. DE has an extreme capability to optimize various kind of problems. In addition to that the paper offers a novel improvement of Differential Evolution (DE) algorithm named as Cross-Opposition Based Differential Evolution (CODE). The impression of Opposition-based learning (OBL) is incorporated in population initialization phase and in step of crossover. To analyze the performance, the algorithm is compared to other existing approaches and it provides better convergence speed while increasing the population size.

Title:

Analysis of Optimal Wheat Yield Prediction Using Feed Forward Neural Networks

Vikas Lamba, Vijay Singh Dhaka and M.P. Singh

Abstract:

Agriculture crop predication is a challenging and interesting problem domain for the computer community. The computer machine helps to improve the productivity of the crop with such predication. This paper illustrates a research model which provides the predications of the wheat crop in the Rajasthan region of India. This paper uses feed forward neural networks models for accomplish the task of predication for the wheat crop. These models are trained with three different feed forward neural networks architectures namely multi-layer perception feed forward neural network, generalized regression neural network and radial basis neural network. There is feature scaling method was used for normalization of large previous year's crop detail data which has been obtained by agriculture department of Rajasthan government. The simulation results indicates the better predication 97.75% with feed forward model trained with BP learning rule in comparison to generalized regression neural network and radial basis neural network.

Title:

Review of Nature-Inspired Algorithm for Synchronization & Resource Allocation

Deepshikha Bhargava1, Chinwe Peace Igiri2
1(Amity Institute of Information Technology, Amity University, India)
2(Amity Institute of Information Technology, Amity University, India)

Abstract:

Synchronization, resource allocation and job scheduling could be collectively referred to as resource management. Nature inspired computation has shown better throughput in terms of performance than conventional computation. A review of the performance of firefly, ant colony, bird flocking and evolutionary algorithms as well as their respective variants have been done. High optimality achieved from different studies justifies that, a particular algorithm could be suitable for any of the resource management domain. Although all the reviewed studies proved better performance, yet practical assumptions are farfetched. This is owing to lack of real world implementation of the algorithms. There is a wide gap between the advancement of natural computation and industrial implementation. Little wonder then why studies in this area revolves around proliferation of new nature inspired algorithms with little or no impact in the industries and society at large.

Title:

Design a New Protocol and Comparison with B92 Protocol for Quantum Key Distribution

Manish Kalra
Amity Institute of Information Technology,
Amity University – Rajasthan, India
E-mail: kalramanish83@gmail.com

Ramesh C. Poonia*
Amity Institute of Information Technology,
Amity University – Rajasthan, India
E-mail: rameshcpoonia@gmail.com

*Corresponding author

Abstract:

Quantum key distribution is the latest advancement in quantum cryptography. There are several QKD protocols like BB84, B92, Ekert91, COW, SARG04, etc. out of which B92 is the Second protocol developed in 1992 based on Heisenberg's Uncertainty Principal. In this paper we are discussing first about the working of B92 protocol and then proposing a new protocol which is a variation over B92 protocol, second the design of simulation setup is discussed and then we compare the performance of B92 with the proposed protocol and prove it much better in case of capacity. Object oriented approach is used in the simulation designing of new protocol and B92 protocol.

Title:

Performance Analysis of Proposed System for Optimum Water Utilization in Garden using Wireless Sensor Networks

Santosh R Durugkar and Ramesh C. Poonia
 Amity Institute of Information Technology, Amity University – Rajasthan, India
E-mail: santoshdurugkar@gmail.com

Amity Institute of Information Technology, Amity University – Rajasthan, India
E-mail: rameshcpoonia@gmail.com

Abstract:

Smart irrigation is the future need as we are observing irregular monsoon, unavailability of water. In this aspect our intention is to increase the yield. We are considering this approach as a future need to conserve and utilize

natural resource at optimum level. Irregularity of monsoon, less availability of groundwater these conditions forced us to develop such systems as future is unpredictable. We are discussing a natural resource i.e. water which is continuously required for better yielding of the crops. Water is required for everyone and it is a tonic for everyone. In future there will be a requirement to use limited water and increase the yield. Temperature, humidityand soil moisture these parameters will play important roles in better crop yielding therefore in proposed system we took careto give information regarding these parameters to the end users through interface (GUI). Proposed system is a good example of interdisciplinary approach i.e. we are tying wireless sensor network (WSN) with this agriculture field. Ultimate goal is to provide immediate water to the plant wherever required depending upon the moisture values. Proposed system works on the priority driven scheduling principle. Value added benefits by the proposed system to the end users are many – pH of the soil and water, TDS of the water, conductivity of the water, level of the water tank, for every node temperature, humidity, moisture these many parameters can be displayed through the GUI and automatically stored in the database for future analysis.

Keywords:

Priority driven scheduling, WSN, Moisture Sensors, Smart Irrigation, pH, temperature, humidity, Smart irrigation, sustainable agriculture.

Title:
A Survey:Nature Inspired Metaheuristic Optimization Algorithms

Sonali Vyas1
Amity Institute of Information Technology
Amity University, Jaipur, Rajasthan
svyas@jpr.amity.edu

Rajeev Ranjan2
Amity Institute of Information Technology
Amity University, Jaipur, Rajasthan
rajeev.ranjan.rajveer@gmail.com

Abstract:
Nature has always inspire us, nature is a rich Source of knowledge .we can learn a lot from nature and implement in our life and make our life better. This algorithm are used over one decade because it provide that efficient methods for solve optimization problem that is not possible to solve with the traditional methods. The main benefits or advantage with these algorithms that they are perform iterative or continuous searches effectively. In the context of we compare nature inspired Metaheuristics algorithms – Firefly algorithm, Ant algorithm, Bat algorithm and fish school algorithm. The comparative analysis is based on the different parameters like its area of application, characteristics , function, evolution year etc. nature inspired algorithm are used for best solution for different optimization problem.

Keywords:

FA; BA; AA; FA; Metaheuristics; Optimization; Nature inspired.

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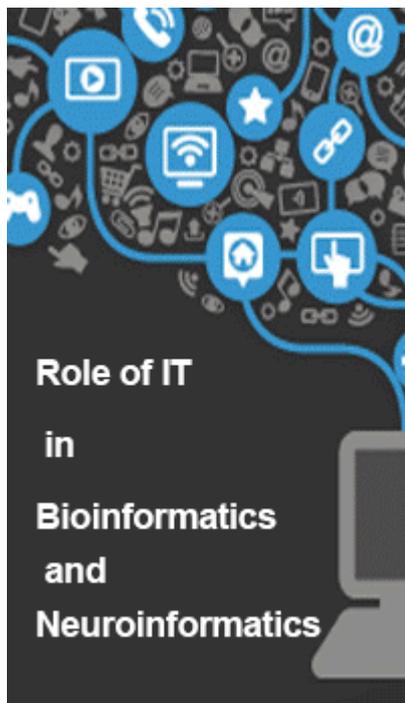
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Special Issue on:
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Guest Editors:

Prof. Deepshikha Bhargava

Amity University Rajasthan – India

dbhargava1@jpr.amity.edu

Dr. Ramesh C. Poonia

Amity University Rajasthan – India

rameshcpoonia@gmail.com

Dr. Swapnesh Taterh

Amity University Rajasthan – India

staterh@jpr.amity.edu