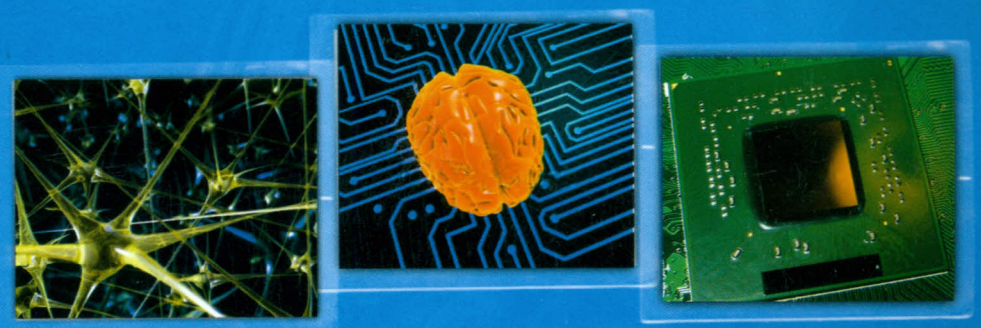
انجمن کامپیوتر ایران
Computer Society of Iran

دانشگاه شیراز

CADS 2012
AISP 2012

Book of Abstracts



Shiraz University
May 2012

A New Hybrid Approach for Data Clustering using Firefly Algorithm and K-means

Tahereh Hassanzadeh
Azad University, Branch of Qazvin
Qazvin, Iran

Mohammad Reza Meybodi
Amirkabir University of Technology
Tehran, Iran

Data clustering is a common technique for data analysis and is used in many fields, including data mining, pattern recognition and image analysis. K-means clustering is a common and simple approach for data clustering but this method has some limitation such as local optimal convergence and initial point sensibility. Firefly algorithm is a swarm based algorithm that use for solving optimization problems. This paper presents a new approach to using firefly algorithm to cluster data. It is shown how firefly algorithm can be used to find the centroid of the user specified number of clusters. The algorithm then extended to use k-means clustering to refined centroids and clusters. This new hybrid algorithm called K-FA. The experimental results showed the accuracy and capability of proposed algorithm to data clustering.

Speech Watermarking Based o Bark S

Mohsen Z
Electrical Eng
Amirkabir University
Tehran,

Farshad Almasganj, SeyedMost
Biomedical En
Amirkabir University
Tehran,

In our article we have proposed a nove the host speech signal in order to prov original signal. There were several cor embed data in speech signals. Those robust against some specific attacks. compressors with very low payload and high were so fragile against common a three critical factors for watermarking: attacks specially compressors, high payl which are widely used for speech recogn have found the best band and used Q method for embedding information. In o the watermarked signal we used Perce (PESQ) in an iterative method. We ha speech watermarking and perceptuallity,

An Energy-Efficient Learning Automata Based Coordination Topology Maintenance Algorithm for Prolonging Lifetime of Ad Hoc Wireless Networks

Shekufeh.Shafeie
Department of Technology and Computer Engineering, Young Researchers Club,
Islamic Azad University, Arak Branch
Arak, Iran

M. R. Meybodi
Department of Computer Engineering and Information Technology,
Amirkabir University of Technology
Tehran, Iran

One of the basic restrictions in Ad Hoc Wireless Networks is energy supply and because of that proposing of power saving protocols that do the normal tasks of network without significantly diminishing the quality of services of the network and consequently, prolonging the lifetime of network has high importance. So, in this paper a distributed power saving technique for multi-hop ad hoc wireless networks based on learning automata has been proposed that all nodes in the network that are equipped with learning automata don't need to be synchronized with each other. Learning automata abilities such as low computational load, usability in distributed environments with ambiguous information, and adaptability to changes via low environmental feedbacks, causes to better fitness with local techniques in ad hoc wireless networks. The proposed protocol, SpanLA, consists of two phases; coordinator announcement and coordinator withdrawal. In SpanLA with a randomized algorithm the option of making local decisions on whether a node going to sleep or to join a forwarding backbone as coordinator is given to learning automata of each node. Unlike the basis protocol of this proposed protocol (span) each node after a random backoff delay uses its own learning automata and if it is needed to be a coordinator according to current conditions, selects the correspondent action and with the help of

learning automata, the SpanLA's made
prevents from redundant nodes to be coo
also runs locally, in a distributed manner
been a coordinator for some period of tim
To ensure fairness, SpanLA uses each
which are based on the status of nodes
So, using learning automata with passi
energy consumption and improving netw
an 802.11 network in power saving m
protocols such as Span and without a
Simulation results with a practical energy

Solving Connected Dominating Set Problem in Unit Disk Graphs by Genetic Algorithms

Maryam Gholami
Department of Computer Engineering,
Islamic Azad University of Qazvin Branch
Qazvin, Iran

Mohammad Reza Meybodi
Faculty of IT and Computer Engineering,
Amirkabir University of Technology
Tehran, Iran

In this paper, we use Genetic Algorithms to find the Minimum Connected Dominating Set (MCDS) of Unit Disk Graphs (UDG). UDGs are used for modeling ad-hoc networks and finding MCDS in such graphs is a promising approach to construct an efficient virtual backbone in wireless ad-hoc networks. The MCDS problem is proved to be NP-complete. The simulation results show that the proposed algorithm outperforms the existing CDS-based backbone formation algorithms in terms of the backbone size.

gnals. Experimental results show that wavelet
tool for the analyzing EEG signals. Also,
he experiments, mixture of experts overcomes
thods.

MABRP: A Multi-Armed Bandit Problem-Based Energy-Aware Routing Protocol for Wireless Sensor Network

Mahmoud Parvin
Computer Engineering Department,
Islamic Azad University of Qazvin
Qazvin, Iran

Mohammad Reza Meybodi
Computer Engineering Department,
Amirkabir University of Technology
Tehran, Iran

Wireless Sensor Networks consist of tiny sensors which have limitations such as energy. These networks are utilized in a variety of applications which aids in boosting the network lifetime hence great amount of researches have been devoted to them. One of the major problems to reach this aim is to focus on routing for utilizing balanced and optimum energy consumption in sensor networks. In this paper we have presented an energy-aware routing protocol namely MABRP which endeavors to select a path to transmit the data to the sink node thus balanced and optimal energy consumption in node is achieved and in so doing it gets help from multi-armed bandit problem. To assess its efficiency, the proposed protocol has been simulated using ns2 simulator and the results obtained have been compared to that of two important routing protocols namely EAR and PGR.

The Computer Society of Iran (CSI) and the Electrical & Computer Engineering School at Shiraz University, are jointly organizing the **16th symposium on Artificial Intelligence & Signal Processing (AISP2012) and Computer Architecture and Digital Systems (CADS2012)** to be held on May 1-3, 2012 in Shiraz, Iran. During this period, the symposium will host researchers, scientists, engineers and practitioners in the fields of artificial intelligence and signal processing and also Computer Architecture and Digital Systems, to exchange their latest research results and findings. **AISP 2012** and **CADS 2012** tries to bring together the leading engineers and scientists from around the world.

شیراز و آب رکنی و این باد خوش نسیم عیبش مکن که خال رخ هفت کشور است حافظ

Shiraz and the water of Ruknabad, and breeze of pleasant air,
Them, contemn not, for they are luster of adornment of seven territories of the world.

Hafiz

Department of Computer Science & Engineering & IT
School of Electrical & Computer Engineering
Shiraz University, Shiraz, I.R.Iran