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Table of content
Vol. 1, No. 1, December 25, 2011

Abstract . Today by growing network systems, security is a key feature of each network infrastructure. Network Intrusion Detection Systems (IDS) provide defense model for all security threats which are harmful to any network. The IDS could detect and block attack-related network traffic. The network control is a complex model. Implementation of an IDS could make delay in the network. Several software-based network intrusion detection systems are developed. However, the model has a problem with high speed traffic. This paper reviews of many type of software architecture in intrusion detection systems and describes the design and implementation of a high-performance network intrusion detection system that combines the use of software-based network intrusion detection sensors and a network processor board. The network processor which is a hardware-based model could acts as a customized load balancing splitter. This model cooperates with a set of modified content-based network intrusion detection sensors rather than IDS in processing network traffic and controls the high-speed.

Keyword : Intrusion Detection systems; Software Architecture; IDS; Network

Abstract . An extremely important part of the finishing line is the pickling process, in which oxides formed during the hot rolling stage are removed from the surface of the steel sheets. The efficiency of the pickling process is mainly dependent on the nature of the oxide present at the surface of the steel, but, also, on process parameters such as bath composition and time duration are relevant. When acid concentration, solution temperatures and line speed are not properly balanced, in fact, sheet defects like under pickling or over pickling may happen and their occurrence does have a very serious effect on cold-reduction performance and surface appearance of the finished product. Furthermore, product damage from handling or improper equipment adjustment can render the steel unsuitable for further processing. This is the reason why it is important that process significant parameters are controlled and maintained as accurately as possible in order to avoid these undesired phenomena. In the present work, a control algorithm, composed by two different modules, i.e. decision tree and rectangular Basis Function Network, has been implemented to aim of predicting pickling defects and suggesting the optimal speed or the admissible speed range of the steel strip in the process line. In this way the most suitable line speed value can be set in an automatic way or by the technical personnel.

Keyword : Steel pickling; Neural network; Decision tree; Process control; Artificial Intelligence

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A Data Mining Approach To Gen Dynamic Behavioral Process

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Doi : 10.7321/jscse.v1.n1.3

Abstract . Biology systems theory and cell biology have enjoyed a long relationship, which, in the context of systems biology, has received renewed interest in recent years by computer science as bioinformatics models. It has often been noted that computer simulation, by providing explicit hypotheses for a particular system and bridging across different levels of organization, can provide an organizational focus which can be leveraged to form substantive hypotheses. Simulations lend meaning to data and can be updated and adapted as further data comes in. Systems biology is concerned with the dynamic behavior of biochemical reaction networks within cells and in cell populations. The biologist's conceptual frameworks, in which to identify the variables of a biochemical reaction network and to describe their relationships, are pathway maps. A principal goal of systems biology is therefore to turn these static maps into dynamical models. In this paper introduces a data mining approach can be use to process of dynamic behavior of a biochemical network from different perspectives. Most bioinformatics tools require specialized input formats for sequence comparison and analysis. This is particularly true for molecular phylogeny programs, which accept only certain formats. In addition, it is often necessary to eliminate highly similar sequences among the input, especially when the dataset is large. Moreover, most programs have restrictions upon the sequence name.

Keyword : Bioinformatics; Data Mining; Dynamic Behavioral

PCA- Based Feature Extraction and k-NN algorithm for Early Jaundice Detection

Muhammad Naufal Mansor, Sazali Yaacob, Hariharan Muthusamy, Shafriza Nisha Basah, Shahrul Hi-fi Syam bin Ahmad Jamil, Mohd Lutfi Mohd Khidir, Muhammad Nazri Rejab, Ku Mohd Yusri Ku Ibrahim, Addzrull Hi-fi Syam bin Ahmad Jamil, Jamaluddin Ahmad

Doi : 10.7321/jscse.v1.n1.4

Abstract . Jaundice is a yellow discoloration of the skin and/or whites of the eyes that is often seen in newborn infants. The discoloration is caused by a yellow substance called bilirubin. Infants with high blood levels of bilirubin, called hyperbilirubinemia, develop the yellow color when bilirubin accumulates in the skin. The main symptom of jaundice is yellow colouring of the skin and conjunctiva of the eyes. Jaundice can also make babies sleepy which can lead to poor feeding. Poor feeding can make jaundice worse as the baby can become dehydrated. If a baby has conjugated jaundice, it may have white chalky stool (poo) and urine that is darker than normal. A PCA method was employed to study the behaviour of the infant. The experimental results reveal that the proposed method can minimize the morbidity and mortality than the conventional method based on k-NN Algorithm.

Keyword : Jaundice Infant; Image Processing; PCA; k-NN

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PCA- Based Feature Extraction and LDA algorithm for Preterm Birth Monitoring

Muhammad Naufal Mansor, Sazali Yaacob, Hariharan Muthusamy, Shafriza Nisha Basah, Shahrul Hi-fi Syam bin Ahmad Jamil, Mohd Lutfi Mohd Khidir, Muhammad Nazri Rejab, Ku Mohd Yusri Ku Ibrahim, Addzrull Hi-fi Syam bin Ahmad Jamil, Jamaluddin Ahmad , Ahmad Kad

Doi : 10.7321/jscse.v1.n1.5

Abstract . Most pregnancies last around 40 weeks. Babies born between 37 and 42 completed weeks of pregnancy are called full term. Premature birth is a serious health problem. Premature babies are at increased risk for newborn health complications, such as breathing problems, and even death. Most premature babies require care in a newborn intensive care unit (NICU). A preemie usually needs frequent office care – to screen vision or hearing problems and assess baby development – involving multiple medical disciplines which require accurate coordination. Thus, we proposed a monitoring system to classify the behavior of a preemie using intelligent vision system. The focus is on predicting preemie behavior based on preemie motion, face and skin analysis. Our preliminary experimental results show a promising performance of the initial part of the system involving preemie face, skin detection and LDA algorithm.
Keyword : Preterm Birtt; Image Processing; PCA; LDA

Simulated Annealing algorithm for Data Aggregation Trees in Wireless Sensor Networks

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Doi : 10.7321/jscse.v1.n1.6

Abstract . Wireless sensor networks look like mobile ad hoc networks based on many aspects, but protocols which are used for ad hoc networks, are not suitable for wireless sensor networks. In ad hoc networks, the main issue about designing of protocols is quality of service, so that in wireless sensor networks the main constraint in designing protocols is limited energy of sensors. In fact, protocols which minimize the power consumption in sensors are more considered in wireless sensor networks. One approach of reducing energy consumption in wireless sensor networks is to reduce the number of packages that are transmitted in network. The technique of collecting data that combines related data and prevent transmission of additional packages in network can be effective in the reducing of transmitted packages' number. According to this fact that information processing consumes less power than information transmitting, Data Aggregation has great importance and because of this fact this technique is used in many protocols [5]. One of the Data Aggregation techniques is to use Data Aggregation tree. But finding one optimum Data Aggregation tree to collect data in networks with one sink is a NP-hard problem. In the Data Aggregation technique, related information packages are combined in intermediate nodes and form one package. So the number of packages which are transmitted in network reduces and therefore, less energy will be consumed that at last results in improvement of longevity of network. Heuristic methods are used in order to solve the NP-hard problem that one of these optimization methods is to solve Simulated Annealing problems. In fact, SA is derived from melting process and re-cooling of materials, so it is called Simulated Annealing. SA does not

present the best result necessarily. But SA sake one good answer that can also be optimum [6].In this article, we will propose new method in order to build data collection tree in wireless sensor networks by using Simulated Annealing algorithm and we will evaluate its efficiency.

Keyword : Data aggregation; Wireless sensor networks; energy efficiency; Simulated Annealing algorithm

A novel classificatory filter for multiple types of erotic images based on Internet

Xu Zhang, Baolong Guo, Yunyi Yan, Chunman Yan

Doi : 10.7321/jscse.v1.n1.7

Abstract . In the condition of which various types of erotic images are available on internet, so big an image database make the retrieval precision and recall rate stay low. Considering the fact that the present erotic image filtering algorithms has a higher false-positive rate when the image is of dark brightness and color distortion, a kind of classificatory filter for multiple types of erotic images on Internet was proposed. The filter consists of three parts: skins-color model matching layer, dark erotic image detecting layer and a decision-making layer based on SVM. The experiment results show that the model can simply realization, overcome the shortness of the traditional methods, effectively improve the detection correction, and fit the requirements of application on Internet.

Keyword : Image processing; Image retrieval; Erotic Image filtering; Skin color model

JSCSE

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Vol. 1, No. 1, December 25, 2012

JSCSE

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