<RECORD 1>

Accession number:20171403544636

Title:Fast KNN search for big data with set compression tree and best bin first

Authors:Chen, Zhenjie (1); Yan, Jingqi (1)

Author affiliation:(1) Institute of Image Processing and Pattern Recognition, Shanghai Jiao Tong University, Key Laboratory of Ministry of Education for System Control and Information Processing, China, Shanghai, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

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Language:English

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Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:This paper proposes k nearest neighbors (kNN) search based on set compression tree (SCT) and best bin first (BBF) to deal with the problem for big data. The large compression rate by set compression tree is achieved by compressing the set of descriptors jointly instead of compressing on a per-descript or basis. So set compression tree has a good performance in kNN search at a low bit rate. At the same time, the best bin first (BBF) is a very efficient algorithm to find the approximately kNN from a large number of high dimensional feature descriptors. SCT-BBF is a novel exploration and it improves search performance in three aspects: First, SCT-BBF requires less memory footprint, which is important in big data age. Second, it increases accuracy compared traditional method like KD-Tree and original SCT. SCT-BBF can be used with other data processing methods like PCA and SIFT to perform better. Third, this paper adopts finer search to increase accuracy at a slight loss of speed. And it can extend to big data easily. &copy; 2016 IEEE.

Number of references:8

Main heading:Big data

Controlled terms:Bins - Cloud computing - Data handling - Internet of things - Nearest neighbor search - Trees (mathematics)

Uncontrolled terms:Best bin firsts - Compression rates - Data processing methods - High dimensional feature - K nearest neighbor (KNN) - Memory footprint - Search performance - Search-based

Classification code:694.4 Storage - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 921.5 Optimization Techniques

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Database:Compendex

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<RECORD 2>

Accession number:20171403544634

Title:An optimized collaborative filtering recommendation algorithm

Authors:Zheng, Longshuai (1, 2); Yang, Shengqi (1, 2); He, Jian (1, 2); Huang, Zhangqin (1, 2)

Author affiliation:(1) Beijing Advanced Innovation Center for Future Internet Technology, Beijing University of Technology, Beijing; 100124, China; (2) Beijing Engineering Research Center for IoT Software and Systems, Beijing University of Technology, Beijing; 100124, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the fast development of E-commerce, the magnitudes of users and commodities grow dramastically, resulting in the extremely sparse user rating data. Traditional products' similarity measurement methods perform poorly when facing sparse user rating data. Considering the extreme sparsity of the rating data, collaborative filtering algorithm based on item rating prediction is introduced. Meanwhile collaborative filtering recommendation technology does not take into account the new product whose rating is not available, although recommendation value is high. In this paper, we propose an improved strategy, which uses SVD (Singular Value Decomposition) matrix decomposition algorithm and cosine similarity to group users into clusters with common interests and further to extract the eigenvector of the commercial products to be evaluated by the users inside each group. By using BP (Back Propagation) neural network as the initial training, the proposed algorithm can predict the satisfaction of users group on new products. For those new products, the algorithm assigns higher recommending grade, and gives the priority during recommendation. Finally the results of this optimized collaborative filtering recommendation algorithm are presented. It is proven that, for new product recommendation, the performance of the new algorithm is 12% better than that of the traditional collaborative filtering recommendation algorithm. &copy; 2016 IEEE.

Number of references:13

Main heading:Collaborative filtering

Controlled terms:Backpropagation - Backpropagation algorithms - Cloud computing - Clustering algorithms - Data mining - Internet of things - Matrix algebra - Rating - Singular value decomposition

Uncontrolled terms:BP (back propagation) neural network - Collaborative filtering algorithms - Collaborative filtering recommendations - Matrix decomposition - Product recommendation - Similarity - Similarity measurements - SVD(singular value decomposition)

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 903.1 Information Sources and Analysis - 921 Mathematics - 921.1 Algebra

Numerical data indexing:Percentage 1.20e+01%

DOI:10.1109/CCIOT.2016.7868309

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 3>

Accession number:20171403544653

Title:An improved adaptive genetic algorithm in flexible job shop scheduling

Authors:Huang, Ming (1); Wang, Lu-Ming (1); Liang, Xu (1)

Author affiliation:(1) Software Institute, Dalian Jiaotong University, Dalian, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

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Article number:7868329

Language:English

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Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In the view of the two aspects problems of the existing genetic algorithm, one is the low quality of the initial solution, the other is that in the later stage of evolution, convergence rate is slow, so we proposed an improved genetic algorithm, which was applied to solve the flexible job shop scheduling problem. This algorithm took the method FJSP as research subject, to minimize the maximum completion time, firstly we improved the initial population, when the initial population selected machines, instead of randomly generating, we used roulette wheel selection strategy to improve the quality of initial population; Secondly, in the process of crossover and mutation, instead of the fixed probability value, the crossover probability and mutation probability could be used to change the value adaptively according to the evolution, we presented a new adaptive probability of crossover and mutation, in the cross-process, POX cross pattern has been used, the convergence rate was greatly improved. Finally, the simulation results verified the advantages of the improved algorithm at the optimum value and convergence rate. &copy; 2016 IEEE.

Number of references:19

Main heading:Job shop scheduling

Controlled terms:Cloud computing - Evolutionary algorithms - Genetic algorithms - Internet of things - Optimization - Probability - Scheduling - Scheduling algorithms

Uncontrolled terms:crossover - Crossover and mutation - Flexible job-shop scheduling - Flexible job-shop scheduling problem - Improved adaptive genetic algorithms - Initial population - mutation - Roulette wheel selection

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management - 921.5 Optimization Techniques - 922.1 Probability Theory

DOI:10.1109/CCIOT.2016.7868329

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 4>

Accession number:20171403544638

Title:Extraction of characteristic spectral bands of wet gluten in wheat based on NIR

Authors:Ye, Dandan (1); Sun, Laijun (1); Zou, Borui (1); Tan, Wenyi (1); Zhang, Dan (1); Che, Wenkai (1)

Author affiliation:(1) Heilongjiang University, Harbin, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Language:English

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Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Wheat is one of the most important food crops. The content of wet gluten in wheat is a key factor to determine the degree of flour gluten. Near infrared spectroscopy was used to predict wet gluten content of wheat by establishing prediction model in this paper. The authors did some processing on the identification of abnormal samples, pretreat spectral data and partitioned calibration set to improve the predictive ability of the model, especially made a deep research on the characteristic spectral bands. The authors collected 100 spectral points and divided them into 25 groups. Through eliminating a set of spectral points to create the partial least-squares regression model and retaining the spectral combinations which had better predictive ability to continue filtering, the authors got the characteristic spectral bands. The result showed that r, R<sup>2</sup>, RPD and SEP of the model created by the whole spectral data reached 0.923, 0.848, 2.564 and 1.421 respectively, while the results of model created by the characteristic spectrum were 0.950, 0.901, 3.177 and 1.149 respectively. The predicting ability of the latter obviously improved. &copy; 2016 IEEE.

Number of references:16

Main heading:Infrared devices

Controlled terms:Cloud computing - Forecasting - Internet of things - Least squares approximations - Near infrared spectroscopy - Regression analysis

Uncontrolled terms:Characteristic spectrum - Extraction of characteristics - Flour gluten - Near Infrared - Partial least squares regression - Partial least squares regression models - Spectral band - Spectral combination

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 921.6 Numerical Methods - 922.2 Mathematical Statistics

DOI:10.1109/CCIOT.2016.7868313

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 5>

Accession number:20171403544647

Title:Design and management methods of Smart Home human-computer relationship

Authors:Jiuqiang, Fu (1); Bing, Jiang (1); Xin, Yang (1)

Author affiliation:(1) School of Design and Arts, Beijing Institute of Technology, Beijing, Country, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:148-151

Article number:7868322

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The advent of Smart Home is the result of advanced information technology and Internet of Things combining with traditional living environment. Smart Home provides a revolutionary live experience, being the direction of future residential development. Currently, research on Smart Home stays at the technical level, and market expectations are high for Smart Home products, but companies did not provide users with practical and reliable products. To resolve this problem, firstly, this study implements a literature study starting from the living behavior based on the study outcomes of foreign country. We classify the people's life in the home environment and analyze the intelligent technology's impact on the traditional home life. During the experiment, we analyze human-computer interaction relationship of Smart Home in detail, establish human-machine interaction management and evaluation system, and propose an optimal method. The results of this paper summarize design and management methods about human-machine relationship of Smart Home systems. Demand-oriented design methods aim to meet people's physical needs, security requirements, social, esteem and self-actualization needs. The management methods for Smart Home systems include acts, scenes, use and manipulation of input and output terminals. &copy; 2016 IEEE.

Number of references:9

Main heading:Human computer interaction

Controlled terms:Automation - Cloud computing - Design - Intelligent buildings - Internet of things

Uncontrolled terms:Design method - Human machine interaction - Human-machine relationships - Intelligent technology - Management method - Residential development - Security requirements - Smart homes

Classification code:402 Buildings and Towers - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 731 Automatic Control Principles and Applications

DOI:10.1109/CCIOT.2016.7868322

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 6>

Accession number:20171403544651

Title:Utilization of IoT in the long-term care field in Japan

Authors:Koezuka, Hiroshi (1)

Author affiliation:(1) College of Business Administration, Ritsumeikan University, Ibaraki Osaka; 567-8570, Japan

Corresponding author:Koezuka, Hiroshi(hkoezuka@mba.ritsumei.ac.jp)

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

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Pages:166-169

Article number:7868326

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In Japan, the interest of corporation and government for IoT increases. IoT is also viewed as important from the perspective of expectations that it will be an epoch-making development not only in the resolution of technological problems but societal issues as well. Long-term care service becomes very important with rapid aging in Japan. Utilization of IoT in the long-term care service field started to develop rapidly since 2015. &copy; 2016 IEEE.

Number of references:6

Main heading:Internet of things

Controlled terms:Cloud computing

Uncontrolled terms:Community care - Long term care - Rapid aging - Roadmap - Societal issues - Society5.0

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868326

Database:Compendex

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<RECORD 7>

Accession number:20171403544655

Title:Analysis on the influence on helicopter route planning by wind

Authors:Zheng, Qiang (1); Yang, Ri-Jie (1); Chen, Jia-Qi (2); Chen, Yi-Huan (3)

Author affiliation:(1) Department of Electronic Engineering, Naval Aeronautical and Astronautical University, Van-Tai, China; (2) Department of Basic Experiment, Naval Aeronautical and Astronautical University, Van-Tai, China; (3) Department of Training, Naval Aeronautical and Astronautical University, Van-Tai, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:189-193

Article number:7868331

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:According to the description and the concrete demand of the influence on flight by wind in the flight meteorology, the route model of the helicopter in air on-call situation flying towards the scheduled point was established. On the basis of this model, the influences by the wind speed and direction, the helicopter speed and direction on the flight time were analyzed in the simulation. The simulation results show that the influence of wind on the route planning cannot be neglected, and provide the policy decision basis for the optimization of route planning and combat efficacy improvement of helicopter. &copy; 2016 IEEE.

Number of references:8

Main heading:Flight simulators

Controlled terms:Cloud computing - Helicopters - Internet of things - Wind

Uncontrolled terms:Flight time - Policy decisions - Route planning - Wind speed and directions

Classification code:443.1 Atmospheric Properties - 652.4 Helicopters - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868331

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 8>

Accession number:20171403544648

Title:The APP of energy optimization and safety monitoring for new energy vehicles based on the mobile internet

Authors:Shi, Tiantian (1); Zhou, Linkai (1); Zeng, Jie (1); Zeng, Yizhe (2)

Author affiliation:(1) School of electrical and Information, Dalian University of Technology, Dalian, China; (2) School of Software Engineering, Dalian Jiaotong University, Dalian, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

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Language:English

ISBN-13:9781467398213

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Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In order to solve the problems of the new energy vehicles, an APP for energy optimization and safety monitoring of new energy vehicles is designed and implemented based on Android platform and the mobile Internet technology. The system demand is analyzed through extensive investigation and study. Specifically, the client composes four functional modules, e.g., registered, MAP calibration, vehicle management and vehicle data. The APP can monitor vehicle data real-timely and conduct data analysis. The safety and reliability of the new energy vehicles can also be achieved through the MAP calibration. &copy; 2016 IEEE.

Number of references:9

Main heading:Vehicles

Controlled terms:Application programs - Calibration - Cloud computing - Electric vehicles - Internet of things - Mobile devices - Monitoring

Uncontrolled terms:Android platforms - Energy optimization - Functional modules - Mobile Internet - Mobile Internet technology - New energy vehicles - Safety monitoring - Vehicle management

Classification code:716 Telecommunication; Radar, Radio and Television - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868323

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 9>

Accession number:20171403544635

Title:The similarity calculation of concept names

Authors:Zhao, Chongchong (1); Cai, Aonan (1)

Author affiliation:(1) School of Beijing Science and Technology University, Beijing; 100083, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

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Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the rapid development of the semantic web, ontology has been rapidly developed. Because of the differences on the constructors and living environments, it causes that different people will get various versions, even when they are constructing the same ontology. How to solve the problem of ontology heterogeneity is a focus issue. There are many ways to solve the ontology heterogeneous issues. But the ontology mapping is the most efficient way to solve ontology heterogeneous issues. In this paper, the concept name similarity algorithm is studied deeply. The concept similarity computing algorithm is not perfect. Thus, this paper proposes an improved concept name similarity algorithm. This paper calculates the edit distance and the semantic similarity. Then the edit distance and the semantic similarity can be integrated into two concepts. Based on the information content, this paper has put forward an improved semantic similarity algorithm. Experiments results show that this algorithm can correspond to the human graded score compared to the traditional semantic similarity algorithm. &copy; 2016 IEEE.

Number of references:10

Main heading:Ontology

Controlled terms:Cloud computing - Internet of things

Uncontrolled terms:concept name similarity - Improved semantic similarities - Ontology heterogeneities - Semantic Web , ontology - Similarity algorithm - Similarity calculation - Similarity computation - Wordnet

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868310

Database:Compendex

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<RECORD 10>

Accession number:20171403544640

Title:Supermarket commodity identification using convolutional neural networks

Authors:Li, Jingsong (1); Wang, Xiaochao (1); Su, Hang (1)

Author affiliation:(1) Key Laboratory of Fiber Optic Sensing Technology and Information Processing, Ministry of Education, Wuhan University of Technology, Wuhan, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Issue date:March 1, 2017

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Pages:115-119

Article number:7868315

Language:English

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Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In recent years, with the rapid development of deep learning, it has achieved great success in the field of image recognition. In this paper, we applied the convolution neural network (CNN) on supermarket commodity identification, contributing to the study of supermarket commodity identification. Different from the QR code identification of supermarket commodity, our work applied the CNN using the collected images of commodity as input. This method has the characteristics of fast and non-contact. In this paper, we mainly did the following works: 1. Collected a small dataset of supermarket goods. 2. Built Different convolutional neural network frameworks in caffe and trained the dataset using the built networks. 3. Improved train methods by finetuning the trained model. &copy; 2016 IEEE.

Number of references:16

Main heading:Retail stores

Controlled terms:Cloud computing - Convolution - Deep learning - Image recognition - Internet of things - Neural networks - Object recognition

Uncontrolled terms:caffe - Convolution neural network - Convolutional neural network - dataset - Non-contact - QR codes

Classification code:716.1 Information Theory and Signal Processing - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

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Database:Compendex

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<RECORD 11>

Accession number:20171403544626

Title:Solving hybrid flow-shop scheduling based on improved multi-objective artificial bee colony algorithm

Authors:Xu, Liang (1); Yeming, Ji (1); Ming, Huang (1)

Author affiliation:(1) College of Software, DJDU, Dalian, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Pages:43-47

Article number:7868300

Language:English

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Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In the model of hybrid flow shop scheduling problem with unrelated parallel machines, the makespan, total weighted earliness/tardiness and total waiting time are established as evaluation index. An algorithm of artificial bee colony based on the method of adaptive neighborhood search is designed. According to the characteristics of the model, initial processing sequence is used as solution vector in order to narrow down feasible solutions. Fitness of populations is distinguished by non-dominated sorting. In the process of iteration, excellent individuals are retained so that the diversity of population distribution is increased. Finally, the method is applied to a simulation example, compared with the traditional multi-objective algorithm. The results obtained demonstrate that the improved ABC algorithm for hybrid flow shop scheduling problem is good effective and diversified. &copy; 2016 IEEE.

Number of references:11

Main heading:Iterative methods

Controlled terms:Cloud computing - Evolutionary algorithms - Internet of things - Machine shop practice - Optimization - Scheduling

Uncontrolled terms:Artificial bee colonies - Artificial bee colony algorithms - Diversity of populations - Hybrid flow shop scheduling - Multi objective - Multi objective algorithm - Multi-objective artificial bee colonies - Unrelated parallel machines

Classification code:604.2 Machining Operations - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management - 921.5 Optimization Techniques - 921.6 Numerical Methods

DOI:10.1109/CCIOT.2016.7868300

Database:Compendex

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<RECORD 12>

Accession number:20171403544649

Title:Research on text structuralization in medical field

Authors:Ding, Xiangwu (1); Zhang, Xihua (1)

Author affiliation:(1) School of Computer Science and Technology, Donghua University, Shanghai, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

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Issue date:March 1, 2017

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Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Transforming the non-structured medical text data into structured data is the basis of the processing and analysis of medical data. The effect of general-purpose word segmentation tools recognizing terminology is not ideal, which greatly affects the accuracy of the word segmentation, and further influences the result of text structuralization. In view of above problems, this paper puts forward a method of discovering new words based on word embedding. It uses Google open source word vector tool word2vec to train text and map the words into abstracted n-dimensional vector space. We can get the latent semantic relations between words and words in the corpus. And then combining the information entropy and word frequency, we can find new words. Finally, we design information extraction rules to get the key information according to the new words, and organize them into structured data. Experimental results on real medical data show that the accuracy is improved by 10% compared to traditional method, and the time is saved by 18% compared to traditional method. &copy; 2016 IEEE.

Number of references:16

Main heading:Data mining

Controlled terms:Character recognition - Cloud computing - Computational linguistics - Internet of things - Metadata - Semantics - Vector spaces

Uncontrolled terms:Chinese word segmentation - Design information extraction - Dimensional vectors - Information entropy - Word embedding - Word frequencies - Word segmentation - Word2vec

Classification code:721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 921 Mathematics

Numerical data indexing:Percentage 1.00e+01%, Percentage 1.80e+01%

DOI:10.1109/CCIOT.2016.7868324

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 13>

Accession number:20171403544641

Title:A mode mixing elimination method of HHT in fault detection

Authors:Li, Jingsong (1); Zhao, Chi (1); Su, Hang (1)

Author affiliation:(1) Key Laboratory of Fiber Optic Sensing Technology and Information Processing, Ministry of Education, Wuhan University of Technology, Wuhan, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:120-123

Article number:7868316

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:As a new method of signal analysis, Hilbert-Huang Transform (HHT) has become one of the research hotspots in modern signal processing field. The main innovations of HHT are the creation of the empirical mode decomposition (EMD) method and the introduction of the concept of intrinsic mode function (IMF). The signal is decomposed as IMFs through EMD, and then we can get the instant frequency through Hilbert Transform (HT). Nowadays, the theory of HHT has been effectively applied to many practical engineering fields. However, there are lots of research to be done for the improvement and development of HHT. In this paper, the basic theory of HHT and the mode mixing phenomenon in EMD are introduced. Subsequently, two methods that can eliminate mode mixing are studied: the method of high-frequency harmonic addition and the method of ensemble empirical mode decomposition. The simulation experiments are conducted with the signal which contains interval signal and pulse of interference. Finally, a mode mixing eliminating method is proposed for the rotating blade signal. The experiment result shows that it is available for the fault detection of the rotating blade. &copy; 2016 IEEE.

Number of references:9

Main heading:Signal processing

Controlled terms:Cloud computing - Computation theory - Fault detection - Internet of things - Mathematical transformations - Mixing - Rotating machinery - Signal analysis - Turbomachine blades - Vibration measurement

Uncontrolled terms:EEMD - Empirical Mode Decomposition - Ensemble empirical mode decomposition - High-frequency harmonics - Hilbert Huang transforms - Intrinsic Mode functions - Mode mixing - Modern signal processing

Classification code:601.1 Mechanical Devices - 716.1 Information Theory and Signal Processing - 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 802.3 Chemical Operations - 921.3 Mathematical Transformations - 943.2 Mechanical Variables Measurements

DOI:10.1109/CCIOT.2016.7868316

Funding Details: Number; Acronym; Sponsor: 51675389; NSFC; National Natural Science Foundation of China - Number; Acronym; Sponsor: 61501338; NSFC; National Natural Science Foundation of China

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 14>

Accession number:20171403544642

Title:Classification of wheat grains in different quality categories by near infrared spectroscopy and support vector machine

Authors:Tan, Wenyi (1); Sun, Laijun (1); Zhang, Dan (1); Ye, Dandan (1); Che, Wenkai (1)

Author affiliation:(1) Heilongjiang University, Harbin, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:124-128

Article number:7868317

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:For the purpose of rapid, simple and accurate identification of quality of wheat grains, this study proposed a recognition method which is an integration of near infrared spectroscopy and support vector machine (SVM). The spectral data of wheat samples were analyzed in order to eliminate abnormal data, and then Mahalanobis distance method was used to identify abnormal samples. After deleting those abnormal samples, principal component analysis was done to prove the feasibility of classifying wheat by near infrared technologies. The remaining 111 wheat samples were divided into calibration set and prediction set by sample set partitioning based on joint X-Y distance algorithm, then, the first derivative, second derivative, standard normal variate (SNV) transformation and their combinations were used to preprocess spectra for obtaining the optimal pretreatment method before modeling. Finally, SVM and back propagation neural network classification model were established with the spectral data preprocessed by second derivative plus SNV and first derivative plus SNV, respectively. Prediction results of SVM model showed that the recognition accuracy rate of strong gluten wheat and weak gluten wheat both achieved 100% and the recognition accuracy rate of medium gluten wheat also reached 81.82%, which proved that SVM classification model with the spectra data preprocessed by the second derivative plus SNV achieved the best results and realized rapid and accurate identification and classification of wheat quality. &copy; 2016 IEEE.

Number of references:12

Main heading:Grain (agricultural product)

Controlled terms:Backpropagation - Classification (of information) - Cloud computing - Infrared devices - Infrared radiation - Internet of things - Near infrared spectroscopy - Neural networks - Principal component analysis - Support vector machines - X-Y model

Uncontrolled terms:Back propagation neural networks - Distance algorithm - Mahalanobis distance method - Pretreatment methods - Recognition accuracy - Recognition methods - Standard normal variate transformations - wheat

Classification code:716.1 Information Theory and Signal Processing - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.4 Artificial Intelligence - 741.1 Light/Optics - 821.4 Agricultural Products - 922.2 Mathematical Statistics

Numerical data indexing:Percentage 1.00e+02%, Percentage 8.18e+01%

DOI:10.1109/CCIOT.2016.7868317

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 15>

Accession number:20171403544656

Title:Potential habitat selection of wild Amur tigers in China

Authors:Meng, Lingjun (1, 3); Zhang, Limei (2); Feng, Zhongke (4); Li, Yiqiu (5)

Author affiliation:(1) Key Laboratory of Remote Sensing Monitoring of Geographic Environment, College of Geographical Science, Harbin Normal University, College of Heilongjiang Province, Harbin; 150025, China; (2) School of History, Cultural Tourism, Heilongjiang University, Harbin; 150080, China; (3) School of Applied Foreign Languages, Heilongjiang University, Harbin; 150080, China; (4) Beijing Forestry University, Beijing Municipal Key Laboratory of Precision Forestry, Beijing; 100083, China; (5) Ecological Security and Protection Key Laboratory of Sichuan Province, Mianyang Normal University, Mianyang; 621000, China

Corresponding author:Zhang, Limei(zhanglm73@sohu.com)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:194-199

Article number:7868332

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The Amur tigers are the most endangered animals in the world, and the researches on the habitats of wild Amur tigers are of great importance for the habitat conservation of them. Based on the historical distribution data of wild Amur tigers and current distribution data of the Amur tigers in China, with the powerful data collection and space analysis of ARCGIS10.1, various influencing factors in the potential habitat selection of the Amur tigers including prey population, slope, slope aspect, elevation, distance to rivers, vegetation, distance to human settlements, distance to major highways and so on were acquired with digitized collection and space analysis, and the probabilistic model of potential habitats of the Amur tigers were established by logistic regression. The results of this study presented good the fitting effect of the Logistic probabilistic model of potential habitats. With the significance level of 0.05, after the hybrid test and the Wald test of the model coefficients, the ROC value was 0.920, which meant good fitting effect. The probability distribution plot of the potential habitats of the Amur tigers was then made by Map Calculator, and the study areas were divided into Not Suitable Habitat, Least Suitable Habitat, Moderately Suitable Habitat, High Suitable Habitat, and Most Suitable Habitat by the method of equal interval probability, in which the areas of High Suitable and Most Suitable Habitats constituted 9.95% and 19.72% accordingly in the total area, with the proportion of Moderately Suitable Habitats of 12.94%. Also, the suitability in the current distribution areas including eastern and western Wandashan Mountains, northern and southern Sikhote-Alin Mountains, southern Zhangguangcai Mountains, Dalong Mountains and Harba Mountains was quite high, and the suitability in the historical distribution areas including northern Zhangguangcai Mountains and the Lesser Khingan mountain range was also very high. Therefore, the establishment of ecological corridors to connect various potential suitable distribution areas is of very important significance in the conservation and expansion of the habitats of wild Amur tigers. &copy; 2016 IEEE.

Number of references:17

Main heading:Population distribution

Controlled terms:Cloud computing - Conservation - Ecosystems - Electric current distribution measurement - Internet of things - Landforms - Population statistics - Probability distributions

Uncontrolled terms:China - Current distribution - Habitat conservation - habitat evaluation - Logistic regressions - Potential habitat - Probabilistic modeling - wild Amur tigers

Classification code:405.3 Surveying - 454.3 Ecology and Ecosystems - 481.1 Geology - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 922.1 Probability Theory - 942.2 Electric Variables Measurements

Numerical data indexing:Percentage 1.29e+01%, Percentage 1.97e+01%, Percentage 9.95e+00%

DOI:10.1109/CCIOT.2016.7868332

Funding Details: Number; Acronym; Sponsor: 41361091; NSFC; National Natural Science Foundation of China - Number; Acronym; Sponsor: 41371486; NSFC; National Natural Science Foundation of China

Database:Compendex

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<RECORD 16>

Accession number:20171403544658

Title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Language:English

ISBN-13:9781467398213

Document type:Conference proceeding (CP)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The proceedings contain 38 papers. The topics discussed include: image segmentation based on iterative self-organizing data clustering threshold of PCNN; marine speech cloud design and implementation; a storage solution for multimedia files to support data deduplication; study on improving multi-objective flexible job shop scheduling based on memetic algorithm in the NSGA-II framework; operation safety assessment of high-speed train with fuzzy group decision making method and empirical research; a distribute reduce side join algorithm; TMVCE-topology-aware multipath virtual cluster embedding algorithm; research on the application of virtual resource scheduling technology in distribution communication network; T-Netm: transparent network monitoring on virtual machine; VM resource constraints based on hierarchy for OpenStack; solving hybrid flow-shop scheduling based on improved multi-objective artificial bee colony algorithm; analyzing trust concerns in public clouds using finite state automata; an improved genetic algorithm using opposition-based learning for flexible job-shop scheduling problem; an implementation of heterogeneous architecture based MapReduce in the clouds; research on earthquake emergency response technology based on Google Maps data; and an optimized collaborative filtering recommendation algorithm.

Abstract type:(Edited Abstract)

Page count:208

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 17>

Accession number:20171403544657

Title:Welcoming Message from General Chair

Authors:Ming, Huang (0)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:iii

Article number:7868334

Language:English

ISBN-13:9781467398213

Document type:Journal article (JA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

DOI:10.1109/CCIOT.2016.7868334

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 18>

Accession number:20171403544637

Title:Community detection and key nodes of complex technology exchange network

Authors:Xiao, Na (1)

Author affiliation:(1) Automation School, Beijing University of Posts and Telecommunications, Beijing, China

Corresponding author:Xiao, Na(annashaw1991@163.com)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:101-104

Article number:7868312

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The complex technology exchange network is composed of the vendor, the vendee and the transaction characteristics. In this construction, vendee and vendor were painted as vertices and the trades were painted as the lines, which connected the points together. The paper is pointed at analysising the result by using the igraph package of R. In accordance with different algorithms, we picked the best suitable one at last to detect the regular pattern in it about the important vertices. &copy; 2016 IEEE.

Number of references:10

Main heading:Complex networks

Controlled terms:Cloud computing - Internet of things - Population dynamics

Uncontrolled terms:Community detection - igraph - important vertices - Key nodes - Regular patterns - Technology exchange

Classification code:722 Computer Systems and Equipment - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 971 Social Sciences

DOI:10.1109/CCIOT.2016.7868312

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 19>

Accession number:20171403544622

Title:A distribute Reduce Side Join algorithm

Authors:Xiao, Shengchen (1, 2); Yang, Shengqi (1, 2); He, Jian (1, 2); Huang, Zhangqin (1, 2)

Author affiliation:(1) Beijing Advanced Innovation Center for Future Internet Technology, Beijing University of Technology, Beijing; 100124, China; (2) Beijing Engineering Research Center for IoT Software and Systems, Beijing University of Technology, Beijing; 100124, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:21-24

Article number:7868296

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In this paper, aiming at overcoming the shortcomings of traditional RSJ (Reduce Side Join) algorithm based on MapReduce framework model, an optimized algorithm is proposed to increase the efficiency of the RSJ by using DistributeCache. The idea of Bit-map algorithm is adopted in this algorithm. Specifically, it extracts and compresses the connection attributes of one of the tables to make a "background" data before executing the traditional RSJ algorithm. The algorithm uses DistributeCache to spread it to various nodes. The "background" data is able to filter out the information which is independent from the records in the table, therefore both the network communication and computation cost are decreased, which increases the efficiency of RSJ. &copy; 2016 IEEE.

Number of references:17

Main heading:Big data

Controlled terms:Cloud computing - Efficiency - Internet of things

Uncontrolled terms:Bit maps - Computation costs - Hadoop - Join algorithm - Map-reduce - Mapreduce frameworks - Network communications - Optimized algorithms

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 913.1 Production Engineering

DOI:10.1109/CCIOT.2016.7868296

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 20>

Accession number:20171403544650

Title:The research of IOT of agriculture based on three layers architecture

Authors:Bing, Fu (1, 2)

Author affiliation:(1) College of Arts and Science, Yangtze University, Jingzhou Hubei, China; (2) College of Computer Science, Yangtze University, Jingzhou Hubei, China

Corresponding author:Bing, Fu(fubing@yangtzeu.edu.cn)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:162-165

Article number:7868325

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Internet of things (IOT) of agriculture is urgent to be developed to support precision agriculture. The IOT system in agriculture mainly consists of three layers, e.g., perception, transportation and application. In this paper, we researched and developed a set of agricultural Internet system with expert guidance. Specifically, we investigated the key sensors in the perception layer, the application mode of Bluetooth and 4G in the transportation layer, and an intelligent algorithm and an application framework for the application layer. The small scale of farmland experiment is carried out to help farmers enjoy benefits of monitoring the plant production process, early warning of main diseases and pests, and rapid diagnosis. &copy; 2016 IEEE.

Number of references:13

Main heading:Agriculture

Controlled terms:Cloud computing - Diagnosis - Internet of things - Sensors

Uncontrolled terms:Application frameworks - Application layers - Application modes - Intelligent Algorithms - Internet of Things (IOT) - Internet system - Plant production - Precision Agriculture

Classification code:461.6 Medicine and Pharmacology - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 821 Agricultural Equipment and Methods; Vegetation and Pest Control

DOI:10.1109/CCIOT.2016.7868325

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 21>

Accession number:20171403544619

Title:Study on improving multi-objective flexible job shop scheduling based on Memetic algorithm in the NSGA-II framework

Authors:Xu, Liang (1); Xia, Zhao Yi (1); Ming, Huang (1)

Author affiliation:(1) School of software, Dalian Jiao Tong University, Dalian, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:1-7

Article number:7868293

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:This paper was the research about multi-objective flexible job shop scheduling based on Memetic algorithm under the improved Non-dominated sorting genetic algorithm II (NSGA - II). On the basis of NSGA-II, a strategy of improving elite which was based on circular crowding distance was designed to increase the diversity of population distribution, prevent algorithm trapping in locally optimal solution, and avoid the disadvantage of premature genetic algorithm. And the research of multi-objective flexible job shop scheduling was established to optimize indexes, which was based on maximum completion time and different equipment load index. &copy; 2016 IEEE.

Number of references:14

Main heading:Job shop scheduling

Controlled terms:Cloud computing - Genetic algorithms - Internet of things - Optimization - Scheduling - Scheduling algorithms

Uncontrolled terms:Different equipment - Diversity of populations - Flexible job shops - Flexible job-shop scheduling - Memetic algorithms - Non dominated sorting genetic algorithm ii (NSGA II) - NSGA-II algorithm - Optimal solutions

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management - 921.5 Optimization Techniques

DOI:10.1109/CCIOT.2016.7868293

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 22>

Accession number:20171403544627

Title:Marine speech cloud design and implementation

Authors:Zhihong, Sun (1)

Author affiliation:(1) Jiangsu Automation Research Institute, Lianyungang, China

Corresponding author:Zhihong, Sun(sunzhihong716@126.com)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:53-56

Article number:7868302

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Providing speech interaction in cloud computing services is a new trend. Current speech clouds in the market are facing common areas. In response to this situation, we propose a marine-oriented field speech cloud, which can meet the individual needs of cloud computing solutions. This paper firstly introduces the soap protocol and describes the speech service system based on soap. Then it gives a speech service system of cloud computing architecture and provides a customizability method of speech cloud which offers personalized service for users in the field of Marine. Finally experiment evaluation proves that marine speech cloud system has more advantages, and has certain extensibility compared with the traditional C/S architecture of speech system. &copy; 2016 IEEE.

Number of references:10

Main heading:Computer architecture

Controlled terms:Cloud computing - Distributed computer systems - Electronic document exchange - Internet of things - Network function virtualization - Speech

Uncontrolled terms:Cloud computing architectures - Cloud computing services - Customizability - Customizable services - Design and implementations - Personalized service - SOAP protocol - Speech interaction

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.5 Computer Applications - 751.5 Speech

DOI:10.1109/CCIOT.2016.7868302

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 23>

Accession number:20171403544630

Title:Research on the application of virtual resource scheduling technology in distribution communication network

Authors:Yang, Peng (1); Ma, Zhicheng (2); Song, Yanbin (3); Zhang, Qiang (3); Liu, Guangxu (4); Hou, Xiaoshuai (4)

Author affiliation:(1) State Grid Gansu Electric Power Company, Information and Telecommunication Branch, Gansu, China; (2) Gansu Tongxing Intelligent Technology Development Limited Liability Company, Gansu, China; (3) Beijing Smart Chip Microelectronics Technology Company, Beijing, China; (4) School of Computer Science and Technology, North China Electric Power University, Beijing, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:68-72

Article number:7868305

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the development of distribution networks, both the type of business and the amount of data transmitted in the network are gradually increasing. In order to guarantee the real-time and reliability transmission of the business data, it has drawn great concern about how to distribute the network resources reasonably in the distribution communication networks. In this paper, we propose a virtual resource scheduling model for distribution communication networks leveraged by the research on resource virtualization technology and the Software Defined Network (SDN). We also realize the virtualization of physical resources and the unified management and scheduling for the physical resources. This model has not only improved the utilization of communication resources, but also reduced the cost of the maintenance and expansion of the distribution network. &copy; 2016 IEEE.

Number of references:14

Main heading:Scheduling

Controlled terms:Cloud computing - Electric power distribution - Internet of things - Telecommunication networks - Virtual reality - Virtualization

Uncontrolled terms:Business data - Communication resources - Network resource - Physical resources - Real time - Resource Virtualization - Resource-scheduling - Virtual resource

Classification code:706.1.2 Electric Power Distribution - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management

DOI:10.1109/CCIOT.2016.7868305

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 24>

Accession number:20171403544628

Title:TMVCE - Topology-aware multipath Virtual Cluster embedding algorithm

Authors:Li, Rongzhen (1); Zhang, Jianfeng (1); Tan, Yusong (1); Wu, Qingbo (1)

Author affiliation:(1) College of Computer, National University of Defense Technology, Changsha, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:57-63

Article number:7868303

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Virtual Cluster refers to the basics of providing distributed parallel system for tenants by sharing resources in cloud data center. Allocating physical resource for virtual cluster is known as virtual cluster embedding problem, which is a critical issue that affects the performance of virtual cluster and resource utilization of the system. In order to effectively reduce the runtime of virtual cluster embedding and improve the revenue/cost ratio, this paper proposes a topology-aware multipath virtual cluster embedding algorithm (TMVCE). Virtual cluster topology information, mainly including the degree and closeness two factors of topology network, is used efficiently for the measurement parameters of VCE. According to extensive experimental tests and the comparison of correlative algorithms, it is obvious that TMVCE obtains a higher embedding efficiency and, to some extent, improves the revenue/cost ratio. &copy; 2016 IEEE.

Number of references:22

Main heading:Clustering algorithms

Controlled terms:Cloud computing - Distributed computer systems - Internet of things - Topology

Uncontrolled terms:closeness and degree - Cloud data centers - Multipath - Network topology - Virtual clusters

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 903.1 Information Sources and Analysis - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory

DOI:10.1109/CCIOT.2016.7868303

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 25>

Accession number:20171403544629

Title:T-Netm: Transparent network monitoring on virtual machine

Authors:Du, Pengchuan (1); Li, Xiaoyong (1)

Author affiliation:(1) Key Laboratory of Trustworthy Distributed Computing and Service (BUPT), Ministry of Education, Beijing University of Posts and Telecommunications, Beijing; 100876, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

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Pages:64-67

Article number:7868304

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the increasing deployment of the cloud computing, security issues of the cloud computing have drawn more and more attentions. In addition, as the virtualization is the core technology of the cloud computing, it has also attracted widespread attentions in both industry and academy. It is widely acknowledged that cloud computing could not be widely adopted in industry unless correctly identify and deal with the security threats. In this paper, we present a transparent network monitoring system on virtual machine. The monitoring system is deployed in the host system and isolated from the target virtual machine. Extensive experiments have been conducted in this paper. The experimental results have verified the effectiveness and practicality of the system. &copy; 2016 IEEE.

Number of references:14

Main heading:Distributed computer systems

Controlled terms:Cloud computing - Internet of things - Monitoring - Network function virtualization - Network security - Virtual machine - Virtual reality - Virtualization

Uncontrolled terms:Cloud monitoring - Core technology - Monitoring system - Network Monitoring - Security issues - Security threats - Transparent network - Virtualization securities

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868304

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 26>

Accession number:20171403544639

Title:An IoT inspired semiconductor Reliability test system integrated with data-mining applications

Authors:Tang, Tyler Junyao (1); Chung, Andrew (1); Zhao, Atman (1); Kang, Randy (1); Zhang, Mark (1); Chien, Kary (1); Yang, Jungang (2); Zhang, Jie (2)

Author affiliation:(1) Quality and Reliability Engineering, Semiconductor Manufacturing International Corporation, Shanghai, China; (2) Institute of Intelligent Manufacturing and Information Engineering, Shanghai Jiao Tong University, Shanghai, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:111-114

Article number:7868314

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Reliability assessment is a key step in ensuring the quality of a product. As semiconductor technology continues to evolve, the reliability test process also complicates, involving engineers and technical assistants responsible for different test tasks. In this paper, we propose a design of a comprehensive Reliability Management and Index System that integrates online test requests, database management and test data analysis. In addition, the resultant big data collected by the system inspire potential data-mining applications for new reliability data-analysis approaches. &copy; 2016 IEEE.

Number of references:11

Main heading:Big data

Controlled terms:Cloud computing - Data handling - Data mining - Information analysis - Information management - Internet of things - Reliability - Reliability analysis - Semiconductor device manufacture - Software reliability - Software testing - Statistical tests

Uncontrolled terms:Bayesian reliabilities - Comprehensive reliability - Data mining applications - industrial 4.0 - Reliability data analysis - Reliability test - Semiconductor technology - Software system designs

Classification code:714.2 Semiconductor Devices and Integrated Circuits - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 903.1 Information Sources and Analysis - 922.2 Mathematical Statistics

DOI:10.1109/CCIOT.2016.7868314

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 27>

Accession number:20171403544620

Title:An improved genetic algorithm using opposition-based learning for flexible job-shop scheduling problem

Authors:Huang, Ming (1); Mingxu, Wang (1); Xu, Liang (1)

Author affiliation:(1) School of software, Dalian Jiaotong University, Dalian, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:8-15

Article number:7868294

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Aiming at the flexible job-shop scheduling problem, the mathematical model was established with the objective of minimizing the makespan, and an improved genetic algorithm using opposition-based learning was proposed. For the characteristics of flexible job-shop scheduling, a dual chains structure coding method was used to encode the chromosome. Population was initialized with a hybrid scheme. Genetic operations were conducted in population among two effective crossover methods and two mutation methods, which were proposed basis of context coding method. Lastly, case-studies based on some typical benchmark examples were carried out to evaluate the proposed algorithm. The experimental results show that these improvements allow the genetic algorithm to reach high quality solutions in very short time. &copy; 2016 IEEE.

Number of references:18

Main heading:Job shop scheduling

Controlled terms:Cloud computing - Genetic algorithms - Internet of things - Learning algorithms - Optimization - Scheduling

Uncontrolled terms:Chains structure - Coding methods - Crossover methods - Flexible job-shop scheduling - Flexible job-shop scheduling problem - Genetic operations - High-quality solutions - Opposition-based learning

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management - 921.5 Optimization Techniques

DOI:10.1109/CCIOT.2016.7868294

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 28>

Accession number:20171403544633

Title:Research on earthquake emergency response technology based on Google Maps data

Authors:Tan, Qing-Quan (1); Luo, Hua-Chun (1); Ren, Zhi-Lin (1); Liu, Qun (1)

Author affiliation:(1) Earthquake Administration of Beijing Municipality, Beijing, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:85-88

Article number:7868308

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:As is well known, earthquake often inflicts severe casualties and property losses. The occurrence of earthquakes cannot be reliably predicted by current technology, therefore the earthquake emergency and rescue is an important part of protecting against and mitigating earthquake disasters. Basic geographical data play an important role in earthquake emergency work. However, it is hard to acquire the spatial data of the earthquake site in short time. Therefore, the Google Maps data could be applied in the early stage of post-earthquake emergency work. This paper discusses the principles of Google Maps and technologies of applying Google Maps data in earthquake emergency work. The downloading and merging algorithm is designed and implemented. Using Google Maps data and the program, we produced thematic maps in real earthquake emergency work. It is proved that the methods are feasible and have great practical application significance. &copy; 2016 IEEE.

Number of references:21

Main heading:Earthquakes

Controlled terms:Cloud computing - Emergency services - Geophysics - Internet of things - Maps

Uncontrolled terms:Current technology - Earthquake disaster - Earthquake emergency response - Geographical data - Google maps - Merging algorithms - Technology-based - Web-GIS

Classification code:405.3 Surveying - 481.3 Geophysics - 484 Seismology - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 914.1 Accidents and Accident Prevention

DOI:10.1109/CCIOT.2016.7868308

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 29>

Accession number:20171403544632

Title:A storage solution for multimedia files to support data deduplication

Authors:Wang, Shuai (1); Du, Jianhai (1); Wu, Jifang (1); Wang, Ronghe (1); Lv, Jianghua (1); Ma, Shilong (1)

Author affiliation:(1) School of Computer Science and Engineering, Beihang University, Beijing, China

Corresponding author:Wang, Shuai(buaashuai@buaa.edu.cn)

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:78-84

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Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Cloud storage systems have become very important for Internet computing. There are many applications with a lot of multimedia files that have high data redundancy. For this class of applications, traditional file systems are not suitable for storing and accessing multimedia files. Because in these systems, multimedia files are usually divided into several blocks which are stored on many data servers. In order to enable these applications to run efficiently, we propose a model of distributed directory tree to describe the logic structure of directories in the data center. Afterwards, we design and implement the RRMFS (Redundancy Removal Multimedia File System) which can support data de-duplication. The experiment results show that RRMFS not only has good writing performance and good accessing performance when it saves multimedia files with higher redundancy, but also can effectively improve the efficiency of disk storage. &copy; 2016 IEEE.

Number of references:16

Main heading:Digital storage

Controlled terms:Cloud computing - Computation theory - Distributed computer systems - Efficiency - File organization - Internet of things - Redundancy - Trees (mathematics)

Uncontrolled terms:Cloud storage systems - Cloud storages - Data de duplications - Design and implements - Internet computing - Multimedia files - Storage efficiency - Writing performance

Classification code:721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 722.1 Data Storage, Equipment and Techniques - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 903.3 Information Retrieval and Use - 913.1 Production Engineering - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory

DOI:10.1109/CCIOT.2016.7868307

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 30>

Accession number:20171403544645

Title:Time-frequency analysis based on Compressive Sensing

Authors:Su, Hang (1); Zhang, Yusi (1)

Author affiliation:(1) Key Laboratory of Fiber Optic Sensing Technology and Information Processing, Ministry of Education, Wuhan University of Technology, Wuhan, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Pages:138-142

Article number:7868320

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Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The time-frequency analysis method based on compressive sensing is premised on the sparsity of time-frequency representation. By constructing the compression-sensing underdetermined equation and reconstruction algorithm, it obtains a high degree of aggregation, low computation and consideration of Time-frequency representation of missing data. Most of the existing work is limited in the stage of basic undetermined equation construction and the use of traditional reconstruction algorithm. The signal model, reconstruction algorithm design and signal self-adapting sparse representation are being lacked of in-depth study. In order to solve the above problems, a general priori model of time-frequency representation for non-stationary signals is established. Under the condition of low SNR and lacking of prior knowledge, we design time-frequency representation reconstruction algorithm with good performance and low complexity, in order to obtain a time-frequency analysis method containing high time-frequency aggregation degree, low computation amount, strong self-adaptation, and consideration of missing data. &copy; 2016 IEEE.

Number of references:16

Main heading:Frequency estimation

Controlled terms:Bayesian networks - Cloud computing - Compressed sensing - Internet of things - Signal reconstruction

Uncontrolled terms:Bayesian estimations - Compressive sensing - Sparse reconstruction - Sparse representation - Time frequency analysis

Classification code:716.1 Information Theory and Signal Processing - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory

DOI:10.1109/CCIOT.2016.7868320

Funding Details: Number; Acronym; Sponsor: 61401308; NSFC; National Natural Science Foundation of China - Number; Acronym; Sponsor: 61501338; NSFC; National Natural Science Foundation of China

Database:Compendex

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<RECORD 31>

Accession number:20171403544621

Title:An implementation of heterogeneous architecture based MapReduce in the clouds

Authors:Tan, Yusong (1); Wang, Wenzhu (1); Wu, Qingbo (1); Lin, Jie (1)

Author affiliation:(1) College of Computer, National University of Defense Technology, Changsha, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:16-20

Article number:7868295

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the rapid development of computer technology, heterogeneous architecture based MapReduce (HA-MapReduce for short) is widely studied in the big data processing domain. Meanwhile, cloud computing is becoming an important alternative for providing computational infrastructure. Therefore, in this paper, we propose an implementation of HA-MapReduce in the cloud environment. First, we design a uniform MapReduce framework for heterogeneous architecture, which can utilize CPU and coprocessor cooperatively and efficiently. Second, we propose a coprocessor token mechanism for handling the coprocessor scalability and fault tolerance issues. Finally, we design a lightweight virtualization based cloud platform for low overhead and easy deployment. We deploy a CPU-MIC heterogeneous cluster for our HA-MapReduce and cloud platform. The experimental results show that our system is up to 1.21&times; and 1.38&times; faster than VM-based cloud platform, and 2.31&times; to 8.39&times; speedups than CPU-based Hadoop. &copy; 2016 IEEE.

Number of references:18

Main heading:Computer architecture

Controlled terms:Big data - Cloud computing - Coprocessor - Data handling - Fault tolerance - Internet of things - Network function virtualization

Uncontrolled terms:Cloud environments - Cloud platforms - Computational infrastructure - Computer technology - Heterogeneous architectures - Heterogeneous clusters - Map-reduce - Mapreduce frameworks

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing

DOI:10.1109/CCIOT.2016.7868295

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 32>

Accession number:20171403544646

Title:The application research of improved cloud genetic annealing algorithm

Authors:Gu, Xiaolin (1); Huang, Ming (1); Liang, Xu (1)

Author affiliation:(1) Software Technology Institute, Dalian Jiao Tong University, DaLian Liaoning Province, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:143-147

Article number:7868321

Language:English

ISBN-13:9781467398213

Document type:Conference article (CA)

Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Improved cloud genetic algorithm (ICGA) was proposed in this paper. ICGA combined the characteristics of the powerful global search capability of genetic algorithm (GA) and the powerful local search capability of simulated annealing (SA). The initial solution was generated by GA, the crossover probability (P<inf>c</inf>) and the mutation probability (P<inf>m</inf>) were generated by the characteristics of randomness and stable tendency of the droplets in the cloud models. Adopting the metropolis sampling process of the SA in the process of crossover and mutation operation, the obtained solution became the initial population of the genetic operations for further evolution. This structure effectively avoided the GA premature and defects of weak local search ability, which improved the search ability of the system. The simulation results further showed the effectiveness of the algorithm. &copy; 2016 IEEE.

Number of references:13

Main heading:Genetic algorithms

Controlled terms:Cloud computing - Internet of things - Job shop scheduling - Local search (optimization) - Optimization - Simulated annealing

Uncontrolled terms:Application research - Cloud genetic algorithms - Cloud modeling - Cross-over probability - Crossover and mutation - Genetic-annealing algorithms - Global search capability - Job shop scheduling problems

Classification code:537.1 Heat Treatment Processes - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 921.5 Optimization Techniques

DOI:10.1109/CCIOT.2016.7868321

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 33>

Accession number:20171403544643

Title:An MMT based heterogeneous multimedia system using QUIC

Authors:Li, Bo (1); Wang, Chengzhi (1); Xu, Yiling (1); Ma, Zhan (2)

Author affiliation:(1) Shanghai Jiaotong University, Shanghai, China; (2) Nanjing University, Nanjing, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Article number:7868318

Language:English

ISBN-13:9781467398213

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Conference name:2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:MPEG has developed a new multimedia transport protocol namely MMT for heterogeneous network transport. Considering the characteristics of both broadcast network and internet, MMT has many advantages compared to traditional transport protocols like MPEG2-TS, RTP and so on. Although MMT has defined a detailed transport protocol for broadcast delivery, the broadband transport protocol of MMT has not been implemented specifically. Nowadays, HTTP is the first choice in most MMT systems. In this paper, we develop a new MMT system using QUIC which is developed by Google as a transport protocol atop UDP as the broadband protocol. This system combines the advantages of MMT and QUIC, thus can achieve better performance than existing MMT systems. We also conduct experiments to compare the performance of the two systems. The experiment results verify that using QUIC in MMT can improve the broadband media transport in MMT system. &copy; 2016 IEEE.

Number of references:13

Main heading:Internet protocols

Controlled terms:Cloud computing - Heterogeneous networks - HTTP - Internet of things - Motion Picture Experts Group standards - Multimedia systems

Uncontrolled terms:Broadcast Networks - MMT Systems - MPEG-2 TS - multimedia transport - QUIC - Transport protocols

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications

DOI:10.1109/CCIOT.2016.7868318

Database:Compendex

Compilation and indexing terms, Copyright 2017 Elsevier Inc.

<RECORD 34>

Accession number:20171403544654

Title:Application of normalized Laplacian spectra for multicast routing evaluations

Authors:Jiao, Bo (1); Huang, Chengdong (1); Guo, Ronghua (1); Li, Bo (1); Huang, Fei (1); Miao, Zhenkun (1); Yuan, Xuejun (1)

Author affiliation:(1) Luoyang Electronic Equipment Test Center, Luoyang, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

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Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:185-188

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Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The multiplicity of the eigenvalue 1 (ME1) and the weighted spectral distribution (WSD), i.e., two weakly-related metrics defined on the normalized Laplacian spectrum, capture the size-independent features of the Internet structure. In this paper, we evaluate the multicast routing protocol in the size-independent Internet structure, and numerically find that the protocol indexes tend to stable as the network size increases if the normalized Laplacian spectrum of the network topology is asymptotically independent of the network size. The real-world Internet topology evolves (i.e., the network size increases) over time, which indicates that the protocol should be evaluated in the size-independent network structure. Our studies provide a specific application of the normalized Laplacian spectrum, which verifies that the size-independent structure captured by the spectrum is useful for the evaluation of network protocols. &copy; 2016 IEEE.

Number of references:16

Main heading:Internet protocols

Controlled terms:Cloud computing - Eigenvalues and eigenfunctions - Internet of things - Laplace transforms - Multicasting - Network protocols - Network routing - Topology

Uncontrolled terms:Internet structure - Internet topologies - Multicast routing - Multicast routing protocol - normalized Lapalcian spectrum - Normalized Laplacian - Size independents - Spectral distribution

Classification code:716 Telecommunication; Radar, Radio and Television - 717 Optical Communication - 718 Telephone Systems and Related Technologies; Line Communications - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 921.3 Mathematical Transformations - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory

DOI:10.1109/CCIOT.2016.7868330

Funding Details: Number; Acronym; Sponsor: 61303061; NSFC; National Natural Science Foundation of China - Number; Acronym; Sponsor: 61402485; NSFC; National Natural Science Foundation of China

Database:Compendex

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<RECORD 35>

Accession number:20171403544652

Title:The shopping assistant Robot design based on ROS and deep learning

Authors:Su, Hang (1); Zhang, Yusi (1); Li, Jingsong (1); Hu, Jie (1)

Author affiliation:(1) Key Laboratory of Fiber Optic Sensing Technology and Information Processing, Ministry of Education, Wuhan University of Technology, Wuhan, China

Source title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Abbreviated source title:Proc. Int. Conf. Cloud Comput. Internet Things, CCIOT

Monograph title:Proceedings of 2016 2nd International Conference on Cloud Computing and Internet of Things, CCIOT 2016

Issue date:March 1, 2017

Publication year:2016

Pages:173-176

Article number:7868328

Language:English

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Document type:Conference article (CA)

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Conference date:October 22, 2016 - October 23, 2016

Conference location:Dalian, China

Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:As the traditional service robots' artificial intelligence bottlenecks, there is a huge gap between service robots and human intelligence in the cognitive and learning discipline. So the service robots could not be widely applied. As deep learning theory is proposed in 2012, it may lead to a generation leap forward in machine learning discipline, so as to improving the traditional robot's cognitive algorithms. This paper studies the principle of three-dimensional Kinect sensor and the deep learning framework of CNN. We proposed a shopping assistant robot designing method which combined Robot Operation System and deep learning method. Firstly, the ROS packages for the service robot are designed. Secondly, Kinect sensors are used for acquiring the information in the robot. Finally, we use simulation to evaluated the design. &copy; 2016 IEEE.

Number of references:7

Main heading:Machine design

Controlled terms:Artificial intelligence - Cloud computing - Computation theory - Deep learning - Design - Intelligent robots - Internet of things - Learning systems - Mobile robots - Robots

Uncontrolled terms:Designing methods - Human intelligence - Kinect - Learning frameworks - Learning methods - Learning Theory - Robot operations - Traditional services

Classification code:601 Mechanical Design - 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.4 Artificial Intelligence - 731.5 Robotics - 731.6 Robot Applications

DOI:10.1109/CCIOT.2016.7868328

Funding Details: Number; Acronym; Sponsor: 61401308; NSFC; National Natural Science Foundation of China - Number; Acronym; Sponsor: 61501338; NSFC; National Natural Science Foundation of China

Database:Compendex

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<RECORD 36>

Accession number:20171403544631

Title:Image segmentation based on Iterative Self-organizing Data Clustering threshold of PCNN

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Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:In order to solve the problem of PCNN with improper parameter selection and determination of circulation iterations which leads to the image owe-segmentation or over-segmentation, an Iterative Self-organizing Data Clustering (ISODC) model is used in this paper to resolve the problems of the PCNN parameters selection and requiring multiple circulation. By using ISODC clustering search decision-making ability, the best threshold value is obtained. ISODC can solve the dilemma that PCNN needs to determine appropriate model parameters and circulation iterations. ISODC-PCNN makes use of the grey level of the image to cluster, and then uses the improved ISODATA to determine the initial number and the center of clustering which can be used as the optimal threshold value of PCNN. Therefore ISODC-PCNN can automatically segment an image with one time of iteration. Experimental results show that the proposed method improves the segmentation speed and achieves good segmentation results. &copy; 2016 IEEE.

Number of references:11

Main heading:Image segmentation

Controlled terms:Cloud computing - Cluster analysis - Clustering algorithms - Decision making - Internet of things - Iterative methods - Neural networks

Uncontrolled terms:Appropriate models - Data clustering - Optimal threshold - Over segmentation - Parameter selection - Parameters selection - Pulse coupled neural network - Segmentation results

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 903.1 Information Sources and Analysis - 912.2 Management - 921.6 Numerical Methods

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<RECORD 37>

Accession number:20171403544644

Title:Improved localization algorithm based on RSSI in low power Bluetooth network

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Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:Due to the low power feature of Bluetooth, network based on Bluetooth has been considered as one of the promising positioning technology candidates by the research and industry communities. In order to reduce the positioning error being introduced by the Received Signal Strength Indication (RSSI) algorithm, an optimized RSSI ranging and positioning algorithm is proposed, which is fully based on the low power Bluetooth positioning technology. First, this algorithm uses the trilateral algorithm to get the rough region estimation which covers all the unknown nodes. Second, by breaking down the area, the algorithm forms the RSSI value for the beacon nodes at the centroid of each region, and also forms the RSSI value at the unknown nodes. Thirdly, the RSSI values that are formed by the beacon node at the unknown node and at the centroid of each region are compared against each other to determine the unknown node's location. Experiments and simulation results show that this algorithm can increase accuracy of distance estimation by 63.3% compared to the traditional centroid localization algorithm. &copy; 2016 IEEE.

Number of references:14

Main heading:Low power electronics

Controlled terms:Bluetooth - Cloud computing - Industrial research - Internet of things

Uncontrolled terms:Centroid localization algorithms - Localization algorithm - low energy blue tooth - Node localization - Positioning algorithms - Positioning technologies - Received signal strength indication - RSSI

Classification code:716.3 Radio Systems and Equipment - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 901.3 Engineering Research

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<RECORD 38>

Accession number:20171403544624

Title:VM resource constraints based on hierarchy for OpenStack

Authors:Xu, Zhigang (1); Xiao, Limin (1); Zhan, Weidian (1); Yue, Xichun (1); Ruan, Li (1); Liu, Rui (2)

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Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:With the rise of cloud computing, resource scheduling in cloud computing platform has gained more and more attention. OpenStack, as one of the most popular open source cloud computing platform, has done a lot of work for physical resources scheduling. As is known to all, users of OpenStack need to allocate resources when the VM was created. So the process of resource allocation plays an important role in limiting resources. But multiple VMs running on the same host will compete for resource probably. We will resolve this problem through dividing the users of OpenStack and the VMs on the OpenStack into different hierarchies. Users belonging to a specific level can only create the VM with corresponding level, and then administrators will use Cgroups to limit the resources of VMs according to their hierarchy. We implement a prototype system on OpenStack to demonstrate our design and test the result of the solution. According to the experiments, VMs with different levels will gain corresponding resource limit strategies. &copy; 2016 IEEE.

Number of references:18

Main heading:Platform as a Service (PaaS)

Controlled terms:Cloud computing - Internet of things - Network function virtualization - Open systems - Scheduling

Uncontrolled terms:Cloud computing platforms - Constraint - Hierarchy - OpenStack - Physical resources - Resource - Resource Constraint - Resource-scheduling

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management

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<RECORD 39>

Accession number:20171403544623

Title:Analyzing trust concerns in public clouds using finite state automata

Authors:Zimba, Aaron (1); Hongsong, Chen (1)

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Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:The perquisites of cloud computing as utility computing over conventional computing are quite evident yet not all users have come to fully embrace this new computing paradigm. The major concern regarding cloud computing is that of the associated security risks. Security risks keep users doubting whether to migrate to the cloud hence triggering trust concerns. Cloud service providers are tasked with the burden of proving to users that they are able to live up to the challenge. Many solutions have been suggested to mitigate cloud security challenges but trust concerns have always lurked in the background. This paper proposes the use of a conceptual finite state automaton to partition the various instances of cloud data into states and transitions. The security concerns of each state and transitions are henceforth analyzed with respect to trust concerns which arise under those respective instances. Since a finite state automaton is scalable, new emerging trust concerns can be addressed by integrating the security concerns they emanate from into new instances of states or transitions hence the flexibility of the proposed approach. &copy; 2016 IEEE.

Number of references:20

Main heading:Trusted computing

Controlled terms:Cloud computing - Internet of things - Network function virtualization

Uncontrolled terms:Cloud service providers - Computing paradigm - Service Level Agreements - State and transitions - State Automaton - States and transitions - Trust - Utility computing

Classification code:722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing

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Database:Compendex

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<RECORD 40>

Accession number:20171403544625

Title:Operation safety assessment of high-speed train with fuzzy group decision making method and empirical research

Authors:Yong, Fu (1); Yong, Qin (1, 3); Shuting, Zheng (1); Wantong, Li (1); Limin, Jia (1, 3); Xinwang, Liu (2); Zhilong, Zhang (4); Jianying, Liang (4)

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Conference code:126722

Sponsor:Clausthal University of Technology; Dalian City Association for International Exchange of Personnel; Dalian Jiaotong University; et al.; Liaoning Normal University; Northeast Normal University

Publisher:Institute of Electrical and Electronics Engineers Inc.

Abstract:High-speed train plays a great significant role in the safe operation of high-speed railway. To ensure the safety and reliability of high-speed train, it is necessary to study the operation safety assessment of high-speed train. Based on its complex integrated mechatronic structure, a multiplex network model is made to study the reliability of high-speed train system and some characters of the model are obtained to establish the operation safety assessment index system associated with people, environment, infrastructure and inherent risk of high-speed train. Considering the uncertainty in the process of operation safety assessment, a new decision model combining intuitionistic fuzzy set and VIKOR method is proposed and applied to the CRH2 high-speed train bogie system operation safety assessment, and Frame Assembly comes the highest risk. The result shows the feasibility and applicability of the method and can provide important technical support for decision-makers. &copy; 2016 IEEE.

Number of references:33

Main heading:Railroad transportation

Controlled terms:Behavioral research - Bogies (railroad rolling stock) - Cloud computing - Decision making - Fuzzy sets - Internet of things - Multiplexing - Railroad cars - Railroad engineering - Railroad plant and structures - Railroads - Reliability - Risk assessment - Safety engineering - Speed

Uncontrolled terms:High speed train (HST) - Intuitionistic fuzzy sets - Multiplex networks - Operation safety - VIKOR

Classification code:433.1 Railroad Transportation, General - 681 Railway Plant and Structures - 681.1 Railway Plant and Structures, General - 682 Railroad Rolling Stock - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 912.2 Management - 914 Safety Engineering - 914.1 Accidents and Accident Prevention - 971 Social Sciences

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