LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel)	:	Gradient Based Optimization in Cascade Forward Neural Network Model for Seasonal Data
Jumlah Penulis	:	4 Orang Penulis ke : 3
Nama Penulis	:	Budi Warsito, Rukun Santoso, **Hasbi Yasin**, Suhartono
Identitas Jurnal Ilmiah		
a. Nama Jurnal	:	Journal of Theoretical and Applied Information Technology (JATIT)
b. Nomor ISSN	:	1817-3195
c. Volume, No, Bulan, Tahun	:	Vol. 96 No. 21, November 2018
d. Penerbit	:	Little Lion Scientific
e. DOI artikel (jika ada)	:	-
f. Alamat web jurnal	:	http://www.jatit.org/volumes/Vol96No21/2Vol96No21.pdf
g. Indexing	:	Scopus

Kategori Publikasi Jurnal Ilmiah : ☑ Jurnal Ilmiah ~~Internasional~~ / Internasional Bereputasi
(beri ✓pada kategori yang tepat) ☐ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi buku (10%)	4	3,5	3,75
b. Ruang lingkup dan kedalaman pembahasan (30%)	12	11,3	11,65
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	10	11	10,50
d. Kelengkapan unsur dan kualitas penerbit (30%)	10	10	10
Total = (100%)	36	35,8	35,9

Semarang, 19 ~~April~~ 4 2019

Reviewer 2

Drs. Sudarno, M.Si
NIP. 19640709 199201 1 001

Unit kerja :
Departemen Statistika Undip

Reviewer 1

Dr. Rukun Santoso, M.Si.
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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah: ~~Internasional~~ / Internasional Bereputasi ** [40]	Nilai Akhir Yang Diperoleh
a. Kelengkapan unsur isi buku (10%)	4	3,75
b. Ruang lingkup dan kedalaman pembahasan (30%)	12	11,65
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12	10,50
d. Kelengkapan unsur dan kualitas penerbit (30%)	12	10
Total = (100%)	**40**	35,9

Semarang, 19 April 2019

Reviewer 2

Drs. Sudarno, M.Si
NIP. 19640709 199201 1 001

Unit kerja :
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Reviewer 1

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Unit kerja :
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(beri ✓pada kategori yang tepat) ☐ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional/Nasional Terindeks di DOAJ, CABI

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah = 40					Nilai Akhir Yang Diperoleh
	Internasional Bereputasi	Internasional	Nasional Terakreditasi	Nasional Tidak Terakreditasi	Nasional Terindeks DOAJ dll.	
a. Kelengkapan unsur isi buku (10%)	4					4
b. Ruang lingkup dan kedalaman pembahasan (30%)	12					12
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12					10
d. Kelengkapan unsur dan kualitas penerbit (30%)	12					10
Total = (100%)	**40**					36
Kontribusi Pengusul (Penulis Anggota)						**5,33 (40%/3)**

Komentar Peer Review:

a. Kelengkapan dan kesesuaian unsur: .....
lengkap
.....

b. Ruang lingkup dan kedalaman pembahasan: .....
pembahasan sangat mendalam
.....

c. Kecukupan dan kemutahiran data/informasi dan metodologi:
flowcart kurang cermat
.....

d. Kelengkapan unsur dan kualitas penerbit: .....
kualitas cetakan kurang baik
.....

e. Indikasi Plagiasi: .....
tidak ada
.....

f. Kesesuaian bidang ilmu: .....
Sangat Sesuai
.....

Semarang, 13-8-2019
Reviewer 1

Dr. Rukun Santoso, M.Si.
NIP. 19650225 199201 1 001

Unit kerja:
Departemen Statistika Undip
Jabatan Fungsional:
Lektor Kepala

LEMBAR
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b. Ruang lingkup dan kedalaman pembahasan (30%)	12					11,3
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12					11
d. Kelengkapan unsur dan kualitas penerbit (30%)	12					10
Total = (100%)	**40**					35,8
Kontribusi Pengusul (Penulis Anggota)						**5,33 (40%/3)**

Komentar Peer Review:

a. Kelengkapan dan kesesuaian unsur: .....
Kualitas penulisan equation kurang baik
.....
.....

b. Ruang lingkup dan kedalaman pembahasan: .....
Pembahasan belum ada modelnya
.....
.....

c. Kecukupan dan kemutahiran data/informasi dan metodologi:
flowchart kurang rasional
.....
.....

d. Kelengkapan unsur dan kualitas penerbit: .....
Editing dan keterangan gambar / tabel belum
.....
bagus
.....

e. Indikasi Plagiasi: .....
tidak terlihat
.....

f. Kesesuaian bidang ilmu: .....
sesuai bidang ilmu yang ditekuni
.....

Semarang, 19/9 - 2019
Reviewer 2

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Unit kerja:
Departemen Statistika Undip
Jabatan Fungsional:
Lektor Kepala

Welcome to Journal of Theoretical and Applied Information Technology

Frequency :MONTHLY

Journal of Theoretical and Applied Informtion Technology
November 2018 | Vol. 96 No.21

Title:	SMOKE DETECTION BASED ON IMAGE PROCESSING BY USING GREY AND TRANSPARENCY FEATURES
Author:	AHMED FAKHIR MUTAR, DR. HAZIM GATI DWAY
Abstract:	In this study, we improve smoke detection approach based on frame movement by analyzing the characteristics of early smoke. Background and different modeling methods are used to detect moving objects in every frame accurately. Sequentially, the image was converted to binary mode, and while undesirable lightness pixels are removed from the image. Smoke was detected by using two features, namely, gray and transparency. The first feature depends on the standard deviation of the object, and the second one measures image transparency. Experimental results show that the suggested algorithm can achieve a high detection rate of smoke approach to 92%. These results were observed by using accuracy scale as a mathematical base for classification.
Keywords:	Motion Detection; Smoke Detection; Standard Deviation; Transparency.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	GRADIENT BASED OPTIMIZATION IN CASCADE FORWARD NEURAL NETWORK MODEL FOR SEASONAL DATA
Author:	BUDI WARSITO, RUKUN SANTOSO, HASBI YASIN, SUHARTONO
Abstract:	Optimization technique is an important part in neural network modeling for obtaining the network weights. The choosing a certain optimization method would influenced the prediction result. Many gradient based optimization methods have been proposed. In this research, we applied the three optimization techniques for obtaining the weights of Cascade Forward Neural Network (CFNN), they were Levenberg-Marquardt, Conjugate Gradient and Quasi Newton BFGS. In CFNN, there are direct connection between input layer and output layer, beside the indirect connection via the hidden layer. The advantage is that this architecture allows the nonlinear relationship between input layer and output layer by not disappear the linear relationship between the two. The proposed model was applied in the time series data with the seasonal pattern. The two data types were used to select the most appropriate optimization method for seasonal series. The first type was the generated data from seasonal ARIMA model and the second was the rainfall data of ZOM 145 at Jumantono Ngadirojo Wonogiri. After processing the proposed methods by using Matlab routine we recommended to use the Levenberg Marquardt as the chosen one.
Keywords:	CFNN, Gradient, Optimization, Seasonal, Rainfall
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	A PROPOSITIONAL LOGIC WITH SUBJUNCTIVE CONDITIONALS FOR SOCIAL MEDIA FRAMEWORK TO EMPOWER THE ENDOWMENT OF GREEN LIBRARY TECHNOLOGY SUSTAINABILITY
Author:	TENGKU ADIL TENGKU IZHAR, MOHD SHAMSUL MOHD SHOID, MOHAMMAD FAZLI BAHARUDDIN, MAZWANI AYU MAZLAN
Abstract:	Many libraries are reluctant to adopt green innovation strategies unless there are clear cost benefits from doing so because such short-term investments for long-term returns are considered risky in corporate environments where performance is judged and based on short-term quarterly returns. However, for the adventurous, a holistic integration of green into entire product lifecycle is worth tackling because of the growth potential it offers. This is because there is limited framework that incorporate social media to promote the important of green technology in library. The aim of this paper is to propose a framework based social media to empower green technology library initiative. The significant of the proposed framework will strengthen library community awareness of environmental sustainability. This is important as society is a part and parcel of what sustainability stands for. Ensuring that library users have access to library resources that their health is being protected within the sustainable environment.
Keywords:	Framework, Green Technology, Library, Social Media, Sustainability
Source:	Journal of Theoretical and Applied Information Technology

	15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	MOOC IMPLEMENTATION IN ADDRESSING THE NEEDS OF GENERATION Z TOWARDS DISCRETE MATHEMATICS LEARNING
Author:	AMELIA NATASYA ABDUL WAHAB, MEI CHOO ANG, RUZZAKIAH JENAL, MURIATI MUKHTAR, NUR FAZIDAH ELIAS, HASLINA ARSHAD, NORAIDAH ASHAARI@SAHARI, SYAIMAK ABDUL SHUKOR
Abstract:	Discrete mathematics is an important subject in the learning of information technology especially for programming and software development. It is a compulsory subject offered to first year students of Undergraduate Degrees in the Faculty of Technology and Information Sciences (FTSM). Discrete mathematics is a subject that is difficult to learn because it involves many theory and concepts. Until recently, Discrete Mathematics modules are mainly taught in a traditional way whereby students are given lectures and tutorials only in the classroom. Students rely on textbooks and lecture notes provided by lecturers. Such approach is not suitable for students in Generation Z. Students in Generation Z will find it hard to learn as learning happens only in the classroom and it leads to boredom. Massive Online Open Course (MOOC) is a web-based learning that can be accessed anywhere and anytime. Integrating the technology into learning process can help improve understanding of the subject matter. Therefore, MOOC implementation is recommended in this study so that generation Z learning preferences are met. In this work, MOOC development for discrete mathematic was implemented based on ADDIE Model. Videos between five and ten minutes were produced using Microsoft Powerpoint, Powtoon and GoAnimate software. Initial survey on the implemented MOOC for Discrete Mathematics showed that it motivated learning and it helped students to understand the subject better.
Keywords:	Generation Z, Massive Online Open Course, Discrete Mathematics, e-Learning, Learning Preferences
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	VALIDITY AND RELIABILITY QUESTIONNAIRE FOR SOCIAL, ENVIRONMENT AND SELF-EFFICACY RELATED OF DEAF ADOLESCENTS PHYSICAL ACTIVITY
Author:	SHOKHAN OMAR ABDULRAHMAN, MOHD RADZANI ABDUL RAZAK , MOHD HANAFI MOHD YASIN , MA DAUWED
Abstract:	Adolescents with hearing impairments have decreased motor skills and motor ability in comparison with normal hearing Adolescents that may lead to less Physical Activity (PA). Hearing impairments might have lower levels of self-efficacy for health behaviors compared to other groups. These issues may prevent them from building a strong social network outside of their own family, which the developing feeling of self-efficacy is particularly complicated for hearing impairments adolescents. This study aimed to determine the validity and reliability of the questionnaire related for physical activity factors. Thirty-six participants from Iraqi schools for deaf adolescent girls participated in this study. To verify that the questionnaire was reliable and without errors, two verification steps were implemented. First, a validation phase was conducted by using experts in related fields to check the questionnaire. All their recommendations were comments obtained was followed before the second step. Secondly, a pilot study was performed to examine the reliability of the instrument. The collected data was analyzed using the Cronbach's alpha Coefficient reliability test found in the SPSS 21 software package. The results showed that all factors were reliable as they obtained a value of 0.7 or above.
Keywords:	Physical Activity, Social, Environment, Self-efficacy, Investigating, Hearing Impairments, and Deaf Adolescents.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	THE PROPOSED IMAGE SEGMENTATION METHOD BASED ON ADAPTIVE K-MEANS ALGORITHM
Author:	INTEDHAR SHAKIR NASIR
Abstract:	Image Segmentation is a significant process in image analysis, which refer to partition an image into coherent regions called (segments). Image segmentation is a mostly useful task in computer vision applications, which used commonly in several applications like image compression, object tracking, object detection, and so on. Current image segmentation techniques, either required prior information about the number of desired parts or segment the image based on certain criteria like uniform texture or color. Current research works, focused on segmentation to classifying the images based on extracted objects, which help to improve retrieving process in advance search engine. The difficulty in segmentation process is how to known the number of coherence regions in the given image. No one can achieve this process except the human mind, and the human only can decided what the interesting or unusual objects in the image. However, this paper suggested a new approach by combine two famous segmentation approaches, which are, region growing based method and clustering based method. The first approach aims to segment the image through sequence of image transformation procedures, then the connected component typically the objects

	regions in that image. Hence, by count these regions in the image; we can estimate the number of objects in the given image. By knowing the estimated number for the objects in the given image, second approach consider this value in for evaluation process. K-Means++ typically implemented in initial step to initialize the seeds when applying standard K-Means algorithm. After the initializing step, standard K-Means algorithm used by consider the pixels color properties at CIE color space. Both algorithms takes into consideration the SSE as a base metric to estimate the number of clusters (objects) in the image. This approach is very useful to understanding images and gives a good perception about it. Finally, the proposed system has tested and evaluated using Barkley dataset, and the experimental results have analyzed using accuracy measure. The evaluation metrics and experimental results shows that the proposed system has achieved better accuracy in order to segment the given images when compared with traditional segmentation methods.
Keywords:	Image Segmentation, Images Analysis, K-Means++, Region Growing, SSE, K-Means.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	IMAGE ENCRYPTION ALGORITHM BASED ON RC4 AND HENON MAP
Author:	DENA S. ALANI, SALAH A. AL IESAWI
Abstract:	In network-based technology like multimedia applications, different encryption techniques are used to protect the confidential data from unauthorized access and provide highly secured data transmission. Due to the large data size and high correlation between pixels, special encryption techniques are used for digital images instead of traditional ciphers that incur significant overhead. In this paper, a new encryption algorithm is proposed using chaotic Henon map with the RC4 algorithm. In the first step, a new basis is presented to reduce the amount of data required to present the image. In the second step, the combination of the RC4 algorithm and the chaotic Henon map function is used to generate sub-keys with N rounds. The sub-key is generated to encrypt one block in each round, so that N of rounds is equal to N of the blocks for the compressed image. The results of using different metrics such as statistical analysis and key sensitivity tests show that the proposed encryption scheme provides an efficient and secure way for real-time image encryption and transmission.
Keywords:	Image Compression, DCT, Image encryption, Chaotic Henon Map, RC4
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	ARABIC ONTOLOGY-BASED APPROACH FOR CHEST DISEASES DIAGNOSIS
Author:	ALI ALNADER, ISSAM SALMAN, KHALIL AJAMI, AMMAR ALZEIN
Abstract:	Chest diseases are a subgroup of respiratory system diseases. The symptoms of these diseases are similar and this makes the diagnosis process difficult. Therefore, to ease the diagnosis process we gathered Information about fourteen diseases, which attack the chest, with their symptoms and investigations about them. In this paper, we present an Arabic ontology-based approach for chest diseases diagnosis. We focus on ontology building process. This ontology can be used to help physicians and other users, determine the chest disease that a patient is suffering from and what are the investigations that should be applied. While experts can easily gather information from this data, lay users lack the expertise needed to deal with it. Most of the efforts to solve this problem focus on the English language. So also, in this paper, we present a new approach based on natural language processing to translate Arabic language query to SPARQL query
Keywords:	Knowledge Representation, Semantic Web, Ontology Development, Arabic Language, SPARQL, Natural Language Processing
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	HYBRID ARTIFICIAL NEURAL NETWORK AND FUZZY LOGIC FOR FUNCTION APPROXIMATION
Author:	ABDUL STTAR ISMAIL WDAA
Abstract:	The problem of intelligent hybrid systems investigated in this study. Intelligent systems consist of fuzzy systems (FS) and neural networks (NN). This intelligent system has specific properties (modeling, ability of learning, obtaining empirical rules, solving optimizing tasks, classifying) fitting certain type of applications. The combination of NN and FS systems makes fuzzy-NN system, neuron-fuzzy system. Such type of combination of systems is known as the hybrid intelligent systems (HIS). There are programs created in C++ and Matlab for these purposes, where many demo applications were made for different HIS in the area of system control and modeling. There are three programs have developed; Neural Network program (NNP), fuzzy program (FP) and Neural networks fuzzy program (NNFP), to investigate the effect of these approaches on ANN learning using several datasets. The results have explored that Neural networks fuzzy (NNF) give quite better results in terms of small errors and convergence rate. compared to NN and FUZZY. The aim of the paper is to prove that the process of hybridization between the algorithms gives better results than the

	use of separate algorithms. This is known as the soft computing. This is implementation on the approximation functions.
Keywords:	Function Approximation; Neural Network; Fuzzy logic
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	PERFORMANCE EVALUATION OF AN ADOPTED SENTIMENT ANALYSIS MODEL FOR ARABIC COMMENTS FROM THE FACEBOOK
Author:	IBRAHIM ROUBY , MOHAMMED BADAWY , MOHAMED NOUR , NADIA HEGAZI
Abstract:	Nowadays, the resources of social media are important for sharing data, news, and opinions. Users of social media can write their tweets, posts, and comments to express their feedback about some services and products. Sentiment analysis is one of the approaches for analyzing users` opinions to extract useful information. This research work analyzes and investigates a sentiment analysis model. The model contains four phases mainly: document/dataset collection, preprocessing operations, scoring and sentiment classification, and evaluation. The dataset collection is concerned with collecting Arabic documents or comments from social media like Facebook. The preprocessing operations involve tokenization, rejection of stopwords, normalization, and stemming. Scoring and sentiment classification are concerned with many important themes mainly: checking negation, handling intensifiers, identifying emotions and sentiment classification. The evaluation phase evaluates the performance of the sentiment analysis model. Moreover, the sentiment analysis model is supported by a set of Arabic lexical resources such as list of Arabic stopwords, list of positive and negative emotions, list of positive and negative modifiers, list of affixes of the light stemmer, and others. The sentiment analysis model helps classifying the users` comments to either positive or negative or neutral sentiments (Sentiment Polarity). The adopted sentiment analysis model is presented to identify sentiments in the Modern Standard Arabic (MSA). The model also can investigate and identify sentiments in informal Arabic (colloquial) where most of social media users are using. Some measurable criteria such as precision, recall, accuracy, and error-rate are adopted to evaluate the performance of the sentiment analysis model. Several experiments are done adopting three important themes of Arabic words mainly: negations, emotions, and intensifiers. The model behavior is changed and affected by using such themes either individually or combined. The model performance is also affected by using the type of Arabic sentence and Arabic language style. Finally, the sentiment analysis model behaves well and presents good accuracy values. The accuracy values of the predicted positive comments are 98.2%, 91.8%, and 85.8% while the values are 93.2%, 92.6%, and 70.1% for the negative comments respectively for MSA, Mixed Arabic, and informal Arabic styles.
Keywords:	Sentiment Analysis, Sentiment Polarity, Social Media, Arabic Text, Sentiment Classification.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	SPEAKER IDENTIFICATION AND LOCALIZATION USING FUSION OF FEATURES AND SCORE LEVEL FUSION
Author:	RASHA H. ALI, DR. MOHAMMED NAJM ABDULLAH, DR. BUTHAINAH F. ABED
Abstract:	The localization and identification of speaker used in diverse application such as meeting, conferences, smart environments and robot-human interactions. So, the accuracy is perfectly significant of these systems which is increasing in the proposed system. In this paper the proposed system depends on identification and localization features. Three stages are presented: the preprocessing, the stage of extraction for the feature and the classification stage. In the stage of preprocessing, the energy and zero crossing techniques that are be using to split voice and silent of the speech signals. While in the stage of feature extraction, the fusion level features that are using for identification and for localization implemented with six features in both domains (the domain of time and frequency). For identification features: - the energy and the zero crossing were extracted in a time domain. The entropy feature was extracted after computation the wavelet transform. The spectral centroid, spread and spectral entropy were extracted after computation the Fourier transform. While for a localization features, the Capon beam forming (MVDR) was implemented. In a classification stage, the random forest was used and the score level fusion technique for random forest and the support vector machine. The ELSDSR dataset was used for training and testing, which contains 198 file sound. The accuracy of the system was 88.050% when using the random forest, and 95.226%
Keywords:	Speaker Localization, Speaker Identification, Random Forest, Support Vector Machine, Feature Level Fusion, Score Level Fusion.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	A PREDICTIVE MODEL FOR STUDENT OUTCOMES USING SPARSE CODING ﬁ HYBRID FEATURES SELECTION
Author:	MARYAM ZAFFAR, MANZOOR AHMED HASHMANI, K.S. SAVITA, ABDUL QAYYUM

Abstract:	Educational data mining is a new research area and is used to predict student performance and provides insight that allows educators to plan accordingly. Its results now play an important role in improving educational standards. Specific algorithms for ﷺFeatures Selectionﷺ optimize the classification accuracy of a prediction model. This work introduces a new method based on sparse representation for features selection and reduction that assesses predictive model's accuracy, precision and recall. Different existing features selection methods are fused and passed to a classifier to measure performance using educational datasets. Experimental results are compared to existent features selection techniques and demonstrate that the proposed approach provides superior solution for data fusion and individual (single) predictive outcomes
Keywords:	Educational Data Mining, Feature Selection, Feature, Feature Reduction, Classification, Predictive Model.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	ANT COLONY OPTIMIZATION ALGORITHM FOR RULE-BASED CLASSIFICATION: ISSUES AND POTENTIAL SOLUTIONS
Author:	HAYDER NASER KHRAIBET AL-BEHADILI , KU RUHANA KU-MAHAMUD , RAFID SAGBAN
Abstract:	Classification rule discovery using ant colony optimization (ACO) imitates the foraging behavior of real ant colonies. It is considered as one of the successful swarm intelligence metaheuristics for data classification. ACO has gained importance because of its stochastic feature and iterative adaptation procedure based on positive feedback, both of which allow for the exploration of a large area of the search space. Nevertheless, ACO also has several drawbacks that may reduce the classification accuracy and the computational time of the algorithm. This paper presents a review of related work of ACO rule classification which emphasizes the types of ACO algorithms and issues. Potential solutions that may be considered to improve the performance of ACO algorithms in the classification domain were also presented. Furthermore, this review can be used as a source of reference to other researchers in developing new ACO algorithms for rule classification.
Keywords:	Rule Discovery, Ant-Miner, Rule Pruning, Parameter Control, Metaheuristics
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	HIGH-ORDER RTV-FUZZY TIME SERIES FORECASTING MODEL BASED ON TREND VARIATION
Author:	NOOR RASIDAH ALI, KU RUHANA KU-MAHAMUD
Abstract:	Time series data principally involves four major components which are trend, cyclical, seasonal and irregular, that reflects the characteristics of the data. Ignoring the systematic analysis of patterns from time series components will affect forecasting accuracy. Thus, this paper proposes a high-order ratio trend variation (RTV) fuzzy time series model based on the trend pattern and variations in time series to deal with patterns within the time series data. RTV is used in the fuzzification process to deal with data that contains vagueness, uncertainty and impreciseness. Proper adjustment was also applied to handle the common issues in fuzzy time series model includes determination of length of interval, fuzzy logic relations (FLRs), assigning weight to each FLR and the defuzzification process. Empirical analysis was performed on enrollments data of Alabama University to assess the efficiency of the model. The performance of the proposed model was evaluated by comparing the average forecasting error rate and mean square error values with several fuzzy time series models in the literatures. Experimental results revealed that the proposed model was better than other fuzzy time series models. The use of RTV was able to grip the fuzziness in time series data and reduce the estimation of forecasting errors. In addition, this technique is capable to identify and describe the underlying structure that influence the occurrence of the uncertainty and high fluctuation of the phenomena under investigation.
Keywords:	High-Order Fuzzy Time Series, Ratio Trend Variation, Enrolment, Fuzzy Logic Relation
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	THE INFLUENCE OF ENVIRONMENTAL UNCERTAINTY ON THE ACCOUNTING INFORMATION SYSTEM QUALITY AND ITS IMPACT ON THE ACCOUNTING INFORMATION QUALITY
Author:	RUHUL FITRIOS, AZHAR SUSANTO, ROEBIANDINI SOEMANTRI, HARRY SUHARMAN
Abstract:	The organizational environment is one factor that is considered when planning and operating the accounting information system. The inability of decision makers to capture information about changes and environmental complexity underlies the lack of accounting information systems quality. This study aims to examine the effect of environmental uncertainty on the accounting information system quality and their impact on the accounting information quality. The study was conducted on 104 financial unit of higher education accredited in Java from 238 target populations selected by stratified random

	sampling technique. This study uses descriptive method and verificative method. The study results show that environmental unvertainty significantly influences the accounting information system quality, dan accounting information system quality significantly influences accounting information quality. The study results can be used to solve the problem on there have no quality of accounting information system by improving the ability accounting information system to adjust and accommodate environmental changes and complexity.
Keywords:	Environmental Change; Environmental Complexcity; Accounting Information System Quality; Accounting Information Quality.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	C-MEANS AND FUZZY TAHANI AS BASE OF CATTLE DATA COLLECTION FROM MANUAL CARD SYSTEM TO ONLINE INFORMATION SYSTEM
Author:	ENDANG SUGIHARTI, RIZA ARIFUDIN, ANGGYI TRISNAWAN PUTRA
Abstract:	Online information system for cattle data collection is the first step of utilizing technology implemented by the Department of Animal Husbandry and Fisheries. The Department of Animal Husbandry and Fisheries is still in the stage of using a manual card system that contains the identity of each cattle through the handwriting on the card. Therefore, it needs to be supported by the updated step through the online information system for data collection of cattle. The problem is how to change the manual card system to the online information system for data collection of cattle based on C-Means and Fuzzy Tahani? The purpose of this research is to build a prototype of an online information system to convert manual card system to an online information system in Semarang Regency area. The methods were conducted with field surveys related to the identity descriptions of each cattle, owner, mutation records, cattle health records, literature studies, and the preparation of online programs through collaborative activities. The results of this research were as follows: (1) producing an online information system design which was based on C-Means and Fuzzy Tahani using PHP and MySQL to support the recording system of each manual card into the online system; (2) producing an online information system prototype for data collection of cattle in Semarang regency; and (3) obtaining the limited test results by using the prototype of this online information system.
Keywords:	Online Information System, Cattle, C-Means, Fuzzy Tahani.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	ABOUT THE FUNCTIONING OF THE SPECIAL-PURPOSE CALCULATING UNIT BASED ON THE LINEAR SYSTEM SOLUTION USING THE FIRST ORDER DELTA-TRANSFORMATIONS
Author:	LIUBOV VLADIMIROVNA PIRSKAYA, NAIL SHAVKYATOVISH KHUSAINOV
Abstract:	This paper discusses the theoretical representations of special-purpose calculating unit functioning for the iteration solution of linear systems using the first order delta-transformations and variable quantum. It is considered the algorithm for iterative solution of linear systems based on the first order delta-transformations and variable quantum is adapted for implementation in a special-purpose calculating unit. A special feature of special-purpose calculating unit functioning based on this algorithm is the implementation of the introduction at the beginning of each cycle l of a new variable quantum value that is reflected in the current cycle when the residual values and the unknown variable are formed by shifting them to the left by 1 or 2 bits. Formation of unknown variables in the unit is carried out by adding or subtracting the signs of quantum of the first and second variables differences, taking at each iteration the values 1. This feature of variable normalization represents the possibility of organizing a computational process on the basis of an integer data representation. At the final step of the algorithm operation in the unit, it is possible to bring the values of the variables to the original real form, taking into account the weight of the minimum transformation quantum. With the orientation to FPGA, comparative estimates are obtained for the hardware and time resources of the developed algorithm and comprehensive comparative estimate of the effectiveness for special-purpose calculating unit functioning. In this paper for the developed algorithm of the unit functioning, it is shown that it is possible to reduce the execution of one iteration and the iterative process as a whole, the amount of hardware resources and generally improve the efficiency in comparison with the special-purpose calculating unit functioning based on the simple iteration method.
Keywords:	Special-Purpose Calculating Unit, Linear System Solution, First Order Delta-Transformation.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	ROUGH SET BASED CONTEXT SUGGESTIONS
Author:	ENAS FADHIL ABDULLAH , GHAIDAA A. Al-SULTANY , HUDA NAJI NAWAF
Abstract:	The classification the progression from splitting the objects on the basis of some criteria. On

	various occurrences, the class of each object is given in progress then it becomes easy to collection the objects in to their classes. This type of classification is called supervised classification. Rule-based classifiers such as rough set classifiers provide rules that basis classify classes of items context such as (social and location).In this paper exploited rough set theory fundamental for context suggestion as contribution and comparing results with classification methods are J48, K-nearest neighbor (K-NN), and decision stump (DS).
Keywords:	CARS, Rough Set Theory, Context Suggestion
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	PERSIAN QUESTION CLASSIFICATION USING HEADWORD AND SEMANTIC FEATURES
Author:	AMIR ROUSTAEI , HAMID RASTEGARI
Abstract:	Question classification is an important component in question answering systems. The task of question classifier is to assign a label, depending on the classification strategy, to written question in natural language. Features are essential elements to obtaining an accurate question classifier. Low accuracy at the fine-grained level is the main problem among classifiers. In this paper, in order to improve the accuracy of question classification, two new features such as question's headword and related semantic words are introduced. If headword is correctly identified, then the accuracy of answer classification increases. On the other hand, semantic meaning of related words effects on accuracy of the answer classification for both coarse and fine grained classes. The result shows the contribution of the presented features in coarse- and fine-grained classification accuracy.
Keywords:	Question Answering, Questions Classification, Machine Learning, Feature Extraction, Headword, Coarse and Fine-Grained Classification.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	A COMPUTATIONALLY EFFICIENT METHOD FOR HIGH ORDER FUZZY TIME SERIES FORECASTING
Author:	SIBARAMA PANIGRAHI, H.S. BEHERA
Abstract:	Despite over more than twenty years of research on fuzzy time series forecasting (TSF) and several studies indicating superior performance, an appropriate computationally efficient method have not been developed to predict various time series using fuzzy TSF method. Motivated by this, in this paper a computationally efficient method is proposed to forecast various time series by using a high order fuzzy TSF model. In this method, the fuzzy TSF parameters such as length of intervals, number of intervals and order of the model are determined deterministically. The order of the model is determined by making analysis on the autocorrelation function (ACF) and partial autocorrelation function (PACF) of the fuzzy time series. The length of interval is determined by using single-variable constrained optimization based method and defuzzification is done by using interval average. In addition, motivated by the boost in forecasting performance due to the use of artificial neural network (ANN) for representing FLR, in this paper, a fast learning one-pass neural network called generalized regression neural network (GRNN) is used for representing the FLR. The use of GRNN model avoids the problems of traditional ANN models such as: ad hoc architecture selection and determining large number of weights and other parameters. In order to evaluate the effectiveness of the proposed model, ten univariate time series datasets are considered and three recent fuzzy time series forecasting models using ANN to represent FLR are implemented. Each model is independently executed for fifty times on each time series and extensive statistical analysis is made on the obtained results. Results revealed the robustness and statistical superiority of the proposed model considering its alternatives existing in the recent literature.
Keywords:	Time Series Forecasting, Fuzzy Time Series, Fuzzy Logical Relationship, Autocorrelation and partial Autocorrelation function, Generalized Regression Neural Network
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	FUZZY RULE INTERPOLATION METHODS AND FRI TOOLBOX
Author:	MAEN ALZUBI, ZSOLT CSABA JOHANYAK, SZILVESZTER KOVACS
Abstract:	FRI methods are less popular in the practical application domain. One possible reason is the missing common framework. There are many FRI methods developed independently, having different interpolation concepts and features. One trial for setting up a common FRI framework was the MATLAB FRI Toolbox, developed by Johany's k et. al. in 2006. The goals of this paper are divided as follows: firstly, to present a brief introduction of the FRI methods. Secondly, to introduce a brief description of the refreshed and extended version of the original FRI Toolbox. And thirdly, to use different unified numerical benchmark examples to evaluate and analyze the Fuzzy Rule Interpolation Techniques (FRI) (KH, KH Stabilized, MACI, IMUL, CRF, VKK, GM, FRIPOC, LESFRI, and SCALEMOVE), that will be classified and

	compared based on different features by following the abnormality and linearity conditions [15].
Keywords:	Fuzzy Rule Interpolation, Fuzzy Interpolating Function, FRI Toolbox, Sparse Fuzzy Rule Base, Missing Fuzzy Rules
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	A STUDY ON RECENT MIXED REALITY PLATFORM AND APPLICATIONS
Author:	XIAOYUN DUAN, SYUNGOG AN, SOO KYUN KIM
Abstract:	Mixed Reality (MR) technology has enormous potential, changing the future for a number of fields. Since 2014 MR technology has been developing rapidly in both hardware and software fields. MR is mostly being applied in medicine operation training, architecture design, business, education, and manufacturing. There are various different MR devices, as we know. This study presents the descriptions of categories of MR system, the adverse effects to human health and hardware limits of MR, and finally describes the MR devices and its applications.
Keywords:	Head-Mounted Displays, Platform, Devices, Application, Mixed Reality, Virtual Reality.
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	WHY DO PEOPLE HAVE SELF-DISCLOSURE ON SNS? BASED ON FEATURES OF SOCIAL MEDIA
Author:	SAE BOM LEE, SEOKHUN KIM
Abstract:	Social media is an open online platform that allows individuals to share their thoughts, opinions, experiences, and information on social network based on the advent of the era of Web 2.0 and to create or expand relationship with others. Social Network services is also included in social media. This study aims to identify why people use SNS for Facebook. The purpose of this study is to understand why people use social networking through the characteristics of social media. Finally, we analyze 287 data by structural equation model and use AMOS 18.0 for analysis. As a result, two of the six hypotheses were rejected and four hypotheses were adopted. Users are posing posts on Facebook and self-disclosure them for communication others and their identity. Thus, users are using Facebook in order to share various information. There are implications that the reasons for using Facebook by an empirical test. Therefore, Facebook will have to try to make it a space where users can communicate more effectively and establish their identity.
Keywords:	Social Media, Social Network Service, Self-Disclosure, Communication, Satisfaction
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	DEVELOPMENT OF QCOST MANAGEMENT SYSTEM FOR MEASURING COSQ (COST OF SERVICE QUALITY)
Author:	SANG-CHUL LEE, KWANG HYUK IM
Abstract:	The purpose of this research is to develop Qcost management system (QMS) and to propose a methodology for measuring the cost of service quality. Firstly, an appropriate framework is proposed for capturing quality costs and detailed analysis is carried out to characterize quality cost in a service company. This research demonstrates the calculation of quality cost based on process classification framework and 6 sigma methodologies. Secondly, QMS is developed through the process of the systems development methodologies, such as requirement analysis, system analysis & design, implementation and test. To test the QCMS, this research analyzed the Qcost in a service company. With this system, companies can control and manage their cost of poor process performance and finds some managerial insights which can help improve the efficiency within the corporation.
Keywords:	Management System, Quality Cost, Service Industry, Key Performance Indicator, Process Classification Framework
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	INTEGRATING REAL-TIME DATA WITH WEB DATA FOR EFFICIENT ENERGY HARVESTING SYSTEMS
Author:	YOUNGKYOUNG KOO, SANGSOO PARK
Abstract:	Since eco-friendly green energy is currently being emphasized, multi-source energy harvesting technology attracts great attention not only to industry but also academia. In

	this paper, we propose a novel approach for integrating real-time and web data for efficient energy harvesting systems. The real-time and web data integration occurs on an intelligent cloud system to minimize the load on the harvesting device. The real-time data are extracted and corrected in case of errors; specifically, error correction is performed by identifying outliers based on the average slope of data. Furthermore, the erroneous data are smoothed through the modified moving average filter. Additionally, web data are acquired from official centers and trimmed based on the location and time of measurement. After the processing, all of these data are integrated using a weighted average. The validity of the data integration is evaluated by comparing correlation coefficients for the original and integrated sets of data. In addition, an advanced design of efficient energy harvesting prototype is introduced and implemented. We expect that integrating data reflects the overall trend of ambient circumstances for efficient energy harvesting systems.
Keywords:	Energy Harvesting, Data Integration
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	MEMORY-ACCESS-AWARE DATA MIGRATION TECHNIQUES FOR LOW POWER EMBEDDED SYSTEM
Author:	YEONJOON HAN, SANGSOO PARK
Abstract:	With the arrival of the Internet of Things (IoT) era, the emergence of new applications to improve various aspects of daily life is encouraged. Most Internet of things devices are small-scale, and battery power sources have improved the mobility of these devices. In this way, execution at low power is an important issue because it is necessary to extend the battery life. In order to improve the performance of small-scale embedded systems, we propose a data migration method for transferring read-dominant data from SRAM to Flash memory. We trace memory accesses, analyze memory access patterns, and separate read-dominant data from the read/write data. Then, the read-dominant data is relocated to the Flash memory sector. These procedures are able to reduce the energy, power, and current consumption for accessing the data in SRAM. Experiments showed that the proposed methodology achieves reduction of power and current consumption compared with conventional storage, which keeps all data in SRAM. Data migration technique could manage efficiently energy and power in IoT device.
Keywords:	Low Power Embedded System, Data Migration, Hybrid Memory, Internet of Things
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	NEGATED ITEMSETS OBTAINING METHODS FROM TREE-STRUCTURED STREAM DATA
Author:	JURYON PAIK
Abstract:	With the rapid development of Internet of Things technologies, millions of physical objects communicate each other and produce huge volumes of data. The IoT revolution comes great opportunities and changes the world completely, but also increases the difficulty of data usage. Along with fusing the cutting-edge technologies, the challenge is the development of software and analytical systems that turn the deluge of massive data produced by different applications over sensor networks and internets into valuable and useful information. One of the popular method is to discover interesting relations between data. However, finding hidden information from xml-based data is not easy task to do. To make matter worse, it is much more difficult if the discovering relation is for between non-exiting parts of data. In this paper, we are trying to figure out how efficiently find out the important non-existing data parts from xml-based data and provide some definitions with adjusted formulas tailored to our target data along with an framed algorithm.
Keywords:	Negated Tree Items, Negative Association Rules, XML Neraged Items, Tree Data, Association Rules
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	REFRAMING TASK PERFORMANCE WITH TECHNOLOGY TO PROMOTE POSITIVE INTERDEPENDENCE IN LANGUAGE LEARNING
Author:	KYEONG-OUK JEONG
Abstract:	The purpose of this study is to investigate how technology can be implemented in the task-based English language learning in order to promote learner collaboration and to build positive interdependence among EFL learners. This study examined the role of new technology in promoting learner motivation and autonomy and boosting mutual collaboration to enhance language learning task performance. The pedagogical framework to enhance task performance of English language learners in this study is based on constructivism and technology-enhanced language learning. The prevailing utilization of technology in English language learning and teaching supports sociocultural notion of learning and teaching based on constructivist perspectives. With the advantages of technology-enhanced EFL learning and teaching settings, more relevant and meaningful

	learning occurs through mutual social interaction with others in authentic and collaborative contexts. This study reveals that the use of technology-enhanced task performance and mutual scaffolding plays a crucial role in promoting positive interdependence among EFL learners in completing a given task. Classroom implementation to integrate new technology will be suggested as instructional procedure. This study revealed that the use of web-based or mobile-based technology integration in task-based EFL learning was effective for improving university students' English communicative competence in the metacognitive, cognitive, affective, and social levels. Technology-enhanced task-based language learning could contribute to enhancing collaborative classroom culture in order to develop positive interdependence among language learners for successful learning along with supporting the self-directed English learning ability.
Keywords:	Technology-enhanced learning, Task performance, Collaborative learning, Positive interdependence, Scaffolding in learning
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	ASYNCHRONOUS REASONING SCHEME FOR GLOBAL ONTOLOGY MANAGEMENT IN INTERNET OF THINGS INFORMATION SYSTEMS: ASYNCR*/GOM
Author:	YONGGOO CHOI, ILKYEUN RA, SANGWON LEE
Abstract:	In the open and dynamic Things of Internet (IoT), synchronization of the things is mandatory to provide their adaptable behaviors and maximum autonomies. The core goal of the synchronization is consistent context reasoning and up-to-date context maintaining in the IoT information systems. For realizing this goal, we present an asynchronous reasoning (AsyncR*) scheme, which is capable of non-stop reasoning while always maintaining up-to-date context information in the IoT information system. The AsyncR* scheme based on semantic-timestamp and forged-version scheduling methods to preserve a serializability between concurrent ontology transactions. We also present a global ontology management (GOM) model and an ontology transaction (OT) model for efficiently governing the IoT ontology system. Finally, we talk key issues of the correctness of the AsyncR* scheme in consideration of diverse synchronous situations.
Keywords:	AsyncR (Asynchronous Reasoning), GOM (Global Ontology Management), Ontology System Model, Ontology Transaction Model, Internet of the Things (IoT).
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	EXTRACTION METHOD OF HUB TEXT ON WEB REVIEW BY TEXT MINING AND NETWORK APPROACH
Author:	JAEWON HONG, SEUNGBAE PARK
Abstract:	In this study, we tried to explore the hub text using web review of airline customers. To accomplish this, airline customer's online review data were collected and text mining and network analysis were applied. The results of this study are as follows. First, we defined the hub text by text mining and network analysis. Second, we explored the characteristics of the hub text. Hub text is a word that is used in conjunction with other text and expresses customer experience. Third, the hub text was related to performance of company. Hub texts were more correlated with customer satisfaction than non - hub texts. In this study, it is meaningful to define the hub text and to characterize the hub text by using the customer's online review data. Also, we can confirm that the company can contribute to the performance through managing the hub text.
Keywords:	Hub Text, Web, Text Mining, Text Analysis, Network Analysis
Source:	Journal of Theoretical and Applied Information Technology 15th Novembber 2018 -- Vol. 96. No. 21 -- 2018

Full Text

Title:	WEATHER INDEX FOR CONSTRUCTION INJURY
Author:	HYUN-JIN, YEO
Abstract:	The Korea has definite four seasons each having different temperature, humidity, and other weather factors. In that, the KMA(Korea Meteorological Administration) has been released diverse weather indexes from life style to industry weather indexes. However, indexes released by the KMA has rough numbers(indicators) which are not from data of industry when it comes to construction and other occupational injury related indexes. By the way, an occupational injury has been world widely studied to protect employees' life and labor power since an injury may cause death or partial disable. Especially, in construct area, an occupational injury is the most important concerns of construction companies. In this research, I merged weather data from KMA and occupational injury data from the KOSHA(Korea Occupational Safety and Health Agency) to make safety weather index with optimal scaling methodology. As a result, I made seven grade safety weather index which divided by injury type in construction industry.
Keywords:	Occupational injury, Construction injury, Weather index, Safety weather

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Full Text

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Gradient based optimization in cascade forward neural network model for seasonal data (Article)

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Abstract

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Optimization technique is an important part in neural network modeling for obtaining the network weights. The choosing a certain optimization method would influenced the prediction result. Many gradient based optimization methods have been proposed. In this research, we applied the three optimization techniques for obtaining the weights of Cascade Forward Neural Network (CFNN), they were Levenberg-Marquardt, Conjugate Gradient and Quasi Newton BFGS. In CFNN, there are direct connection between input layer and output layer, beside the indirect connection via the hidden layer. The advantage is that this architecture allows the nonlinear relationship between input layer and output layer by not disappear the linear relationship between the two. The proposed model was applied in the time series data with the seasonal pattern. The two data types were used to select the most appropriate optimization method for seasonal series. The first type was the generated data from seasonal ARIMA model and the second was the rainfall data of ZOM 145 at Jumantono Ngadirojo Wonogiri. After processing the proposed methods by using Matlab routine we recommended to use the Levenberg Marquardt as the chosen one. © 2005 – ongoing JATIT & LLS.

SciVal Topic Prominence

Topic: Artificial neural network | Wavelet | Flood forecasting

Prominence percentile: 99.217

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CFNN Gradient Optimization Rainfall Seasonal

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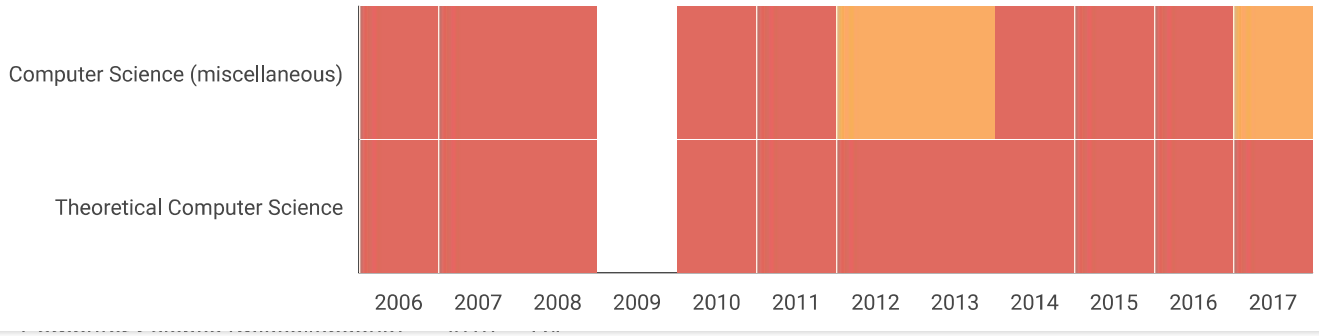

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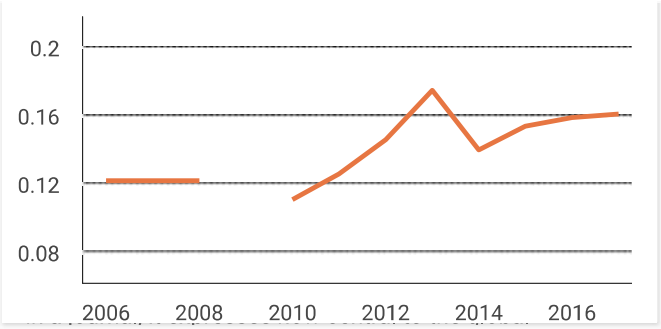

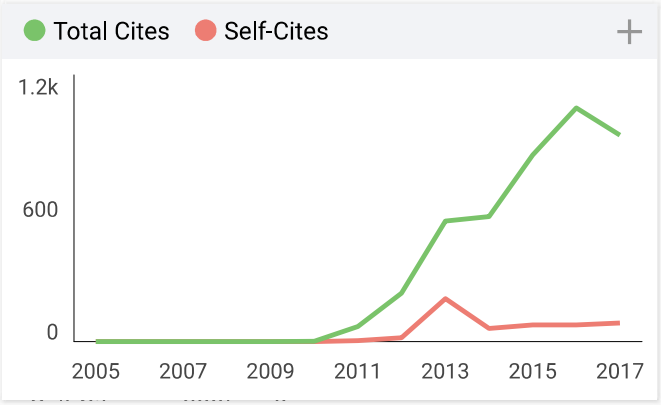

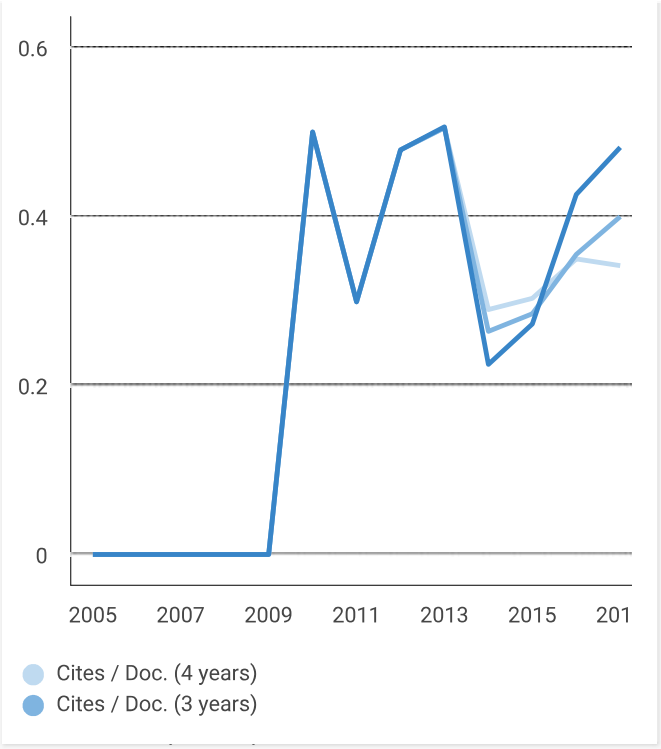

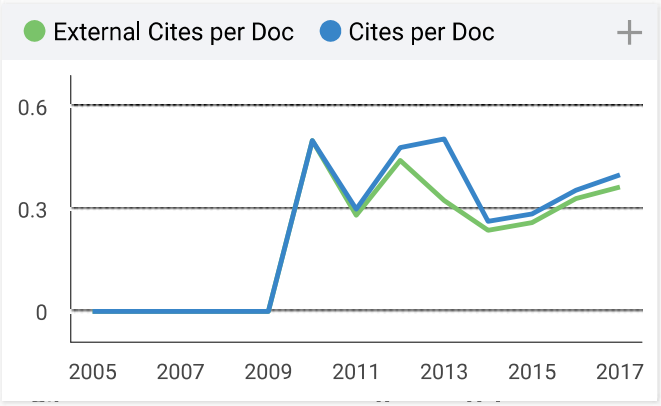

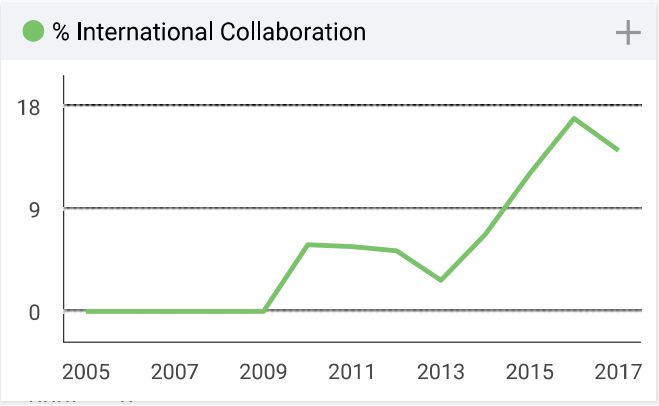

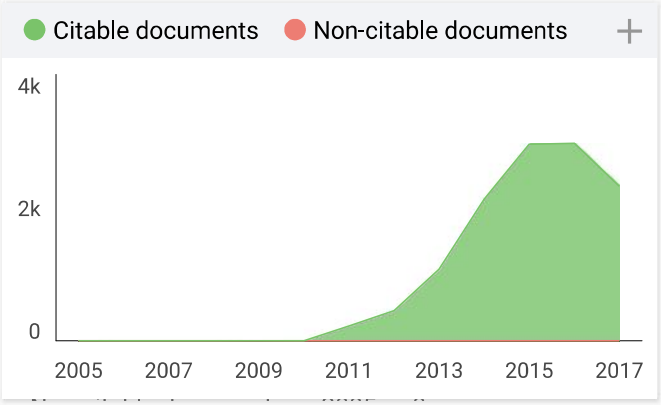

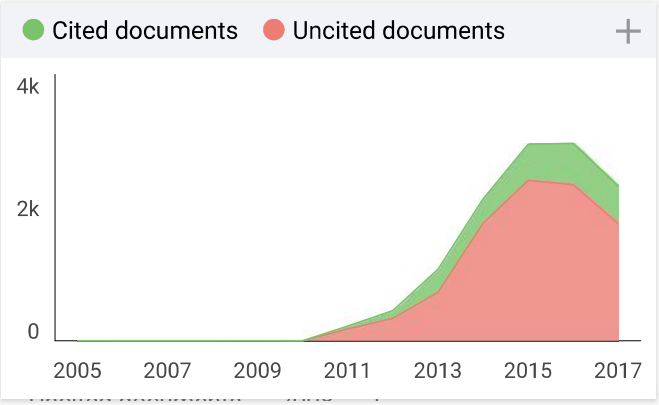

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