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A CRITICAL STUDY OF SELECTED CLASSIFICATION ALGORITHMS FOR LIVER DISEASE DIAGNOSIS

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ABSTRACT:

PatientswithLiverdiseasehavebeencontinuouslyincreasingbecauseofexcessiveconsumption of alcohol, inhale of harmful gases, intake of contaminated food, pickles and drugs. Automatic classificationtoolsmayreduceburdenondoctors.Thispaperevaluatestheselected classification algorithms for the classification of some liver patient datasets. The classification algorithms considered here are Naïve Bayes classifier, C4.5, Back propagation Neural Network algorithm, and Support Vector Machines. These algorithms are evaluated based on four criteria: Accuracy, Precision, Sensitivity and Specificity.

KEYWORDS:

ClassificationAlgorithms,DataMining,Liverdiagnosis

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[11] Michael J. Sorich,† John O. Miners,*,‡ Ross A. McKinnon,† David A. Winkler,§ Frank R. Burden,| and Paul A. Smith‡ Comparison of linear and nonlinear classification algorithms for the predictionof drugandchemicalmetabolismbyhumanUDP-GlucuronosyltransferaseIsoforms

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CitationCount–168

CUSTOMERDATACLUSTERINGUSINGDATAMININGTECHNIQUE

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ABSTRACT:

Classificationandpatternsextractionfromcustomerdataisveryimportantforbusinesssupport anddecisionmaking.Timelyidentificationofnewlyemergingtrendsisveryimportantin businessprocess.Largecompaniesarehavinghugevolumeofdatabutstarvingforknowledge. To overcome the organization current issue, the new breed of technique is required that has intelligenceandcapabilitytosolvetheknowledgescarcityandthetechniqueiscalledData mining. The objectivesof this paper are to identify the high-profit, high-value and low-riskcustomersby oneof thedataminingtechnique- customerclustering.In thefirst phase,cleansing the dataanddevelopedthepatternsviademographicclusteringalgorithmusingIBMI-Miner.In the second phase, profiling the data, develop the clusters and identify the high-value low-risk customers.Thisclustertypicallyrepresentsthe10-20percentofcustomerswhichyields80%of the revenue.

KEYWORDS:

Datamining,customerclusteringand I-Miner

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HIGHCAPACITYDATAHIDINGUSINGLSB STEGANOGRAPHYANDENCRYPTION

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ABSTRACT

Thenetworkprovidesamethodofcommunicationtodistributeinformationtothemasses.With thegrowthofdatacommunicationovercomputernetwork,thesecurityofinformationhas become a major issue. Steganography and cryptography are two different data hiding techniques. Steganography hides messages inside some other digital media. Cryptography, on the other hand obscuresthecontentofthemessage.Weproposeahighcapacitydataembeddingapproachby the combination of Steganography and cryptography. In the process a message is first encryptedusing transposition cipher method and then the encrypted message is embeddedinside an image usingLSBinsertionmethod.Thecombinationof thesetwomethodswillenhancethesecurityof thedataembedded.Thiscombinationalmethodologywillsatisfytherequirementssuchas capacity,securityandrobustnessforsecuredatatransmissionoveranopenchannel.A comparativeanalysisismadetodemonstratetheeffectivenessof theproposedmethodby computingMeansquareerror(MSE)andPeakSignaltoNoiseRatio(PSNR).Weanalyzedthe data hiding technique using the image performance parameters like Entropy, Mean and Standard Deviation.Thestegoimagesaretestedbytransmittingthemandtheembeddeddataare successfully extracted by the receiver. The main objective in this paper is to provide resistanceagainst visual and statistical attacks as well ashighcapacity.

KEYWORDS

Steganography, Cryptography, plain text, encryption, decryption, transposition cipher, Least SignificantBit, HumanVisualSystem,MeansquareerrorandPeakSignaltoNoiseRatio.

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CitationCount–136

ASURVEY ONEDUCATIONALDATAMINING ANDRESEARCHTRENDS

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ABSTRACT

Educational Data Mining (EDM) is an emerging field exploring data in educational context by applyingdifferentDataMining(DM)techniques/tools.Itprovidesintrinsicknowledgeof teaching and learning process for effective education planning. In this survey work focuses on components,researchtrends(1998to2012)ofEDMhighlightingitsrelatedTools,Techniques and educational Outcomes.It also highlights the ChallengesEDM.

KEYWORDS

EducationalDataMining(EDM),EDMComponents,DMMethods,EducationPlanning

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CitationCount–119

AXGBOOSTRISKMODELVIAEATURESELECTION AND BAYESIANHYPER-PARAMETEROPTIMIZATION

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ABSTRACT

This paper aims to explore models based on the extreme gradient boosting (XGBoost) approach for business risk classification. Feature selection (FS) algorithms and hyper-parameter optimizations are simultaneously considered during model training. The five most commonly used FS methods including weight by Gini, weight by Chi-square, hierarchical variable clustering, weight by correlation, and weight byinformationareappliedtoalleviatetheeffectofredundantfeatures.Twohyper-parameteroptimization approaches, random search (RS) and Bayesian tree-structured Parzen Estimator (TPE), are applied in XGBoost. The effect of different FS and hyper-parameter optimization methods on the model performance are investigated by the Wilcoxon Signed Rank Test. The performance of XGBoost is compared to the traditionally utilized logistic regression (LR) model in terms of classification accuracy, area under the curve (AUC), recall, and F1 score obtained from the 10-fold cross validation. Results show that hierarchical clustering is the optimal FS method for LR while weight by Chi-square achieves the best performance in XG-Boost. Both TPE and RS optimization in XGBoost outperform LR significantly. TPE optimizationshowsasuperiorityoverRSsinceitresultsinasignificantlyhigheraccuracyandamarginally higher AUC, recall and F1 score. Furthermore, XGBoost with TPE tuning shows a lower variability than the RS method. Finally, the ranking of feature importance based on XGBoost enhances the model interpretation. Therefore, XGBoost with Bayesian TPE hyper-parameter optimization serves as an operative while powerful approach for business risk modeling.

KEYWORDS

Extreme gradient boosting; XGBoost; feature selection; Bayesian tree-structured Parzen estimator; risk modeling

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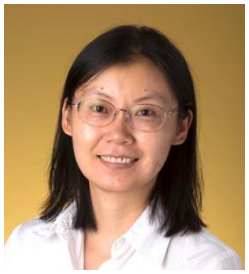

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EXPERIMENTALEVALUATIONOFNOSQLDATABASES

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ABSTRACT

Relational databases are a technology used universally that enables storage, management andretrieval of varied data schemas. However, execution of requests can become a lengthy andinefficient processfor some large databases. Moreover,storinglarge amountsof data requires servers with larger capacities and scalability capabilities. Relational databaseshave limitations to deal with scalability for large volumes of data. On the other hand, non-relational database technologies,alsoknownasNoSQL,weredevelopedtobettermeettheneedsofkey-value storageof large amountsof records.But thereis a large amountof NoSQLcandidates,andmost havenotbeencomparedthoroughlyyet.Thepurposeofthispaperistocomparedifferent NoSQL databases, to evaluate their performance according to the typical use for storing and retrievingdata.Wetested10NoSQLdatabaseswithYahoo!CloudServingBenchmarkusinga mix of operations to better understand the capability of non-relational databases for handlingdifferentrequests,andtounderstandhowperformanceisaffectedbyeachdatabasetypeand their internal mechanisms.

KEYWORDS

NoSQLdatabases,SQLdatabases,performanceevaluation,databasemodels, YCSB

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CitationCount–93

APPROXIMATEK-NEARESTNEIGHBOURBASED SPATIALCLUSTERINGUSINGK-DTREE

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ABSTRACT

Different spatial objects that vary in their characteristics, such as molecular biology and geography, are presented in spatial areas. Methods to organize, manage, and maintain those objects in a structured manner are required. Data mining raised different techniques to overcome these requirements. There are many major tasks of data mining, but the mostly used task is clustering. Data set within the same cluster share common features that give each cluster its characteristics.In this paper, an implementation of Approximate kNN-based spatial clustering algorithm using the K-d tree is proposed. The major contribution achieved by this research is the use of the k-d tree data structure for spatial clustering, and comparing its performance to the brute-force approach. The results of the work performed in this paper revealed better performance using the k-d tree, compared to the traditional brute-force approach.

KEYWORDS

Spatialdata,SpatialClustering,ApproximatekNN,K-dtree,brute-force.

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CitationCount–89

A DATA QUALITY METHODOLOGY FOR HETEROGENEOUS DATA

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ABSTRACT

We present a Heterogenous Data Quality Methodology (HDQM) for Data Quality (DQ) assessment and improvement that considers all types of data managed in an organization, namely structured data represented in databases, semistructured data usually represented in XML, and unstructured data represented in documents. We also define a meta-model in order to describe the relevant knowledge managed in the methodology. The different types of data are translated in a common conceptual representation. We consider two dimensions widely analyzed in the specialist literature and used in practice: Accuracy and Currency. The methodology provides stakeholders involved in DQ management withacompleteset ofphases for dataqualityassessmentandimprovement.A nontrivialcasestudyfrom the business domain is used to illustrate and validate the methodology.

KEYWORDS

Dataquality,Methodology,structureddata,semistructureddata,unstructureddata

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CLOUD DATABASE DATABASE AS A SERVICE

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ABSTRACT

Cloud computing has been the most adoptable technology in the recent times, and the database has also moved to cloudcomputingnow, so we willlook into thedetailsofdatabase asa service and itsfunctioning. Thispaperincludesallthebasicinformationaboutthedatabaseasaservice.The workingofdatabaseasa service and the challenges it is facing are discussed with an appropriate. The structure of database incloud computing and its working in collaboration with nodes is observed underdatabase as a service. This paper also will highlight the important things to note down before adopting a database as a service provides that is best amongst the other. The advantages and disadvantages of database as a service will let you to decideeitherto usedatabaseasa service ornot. Databaseasa service hasalreadybeen adopted by many e-commerce companies and those companies are getting benefits from this service.

KEYWORDS

Database,cloudcomputing,Virtualization,DatabaseasaService(DBaaS).

ForMoreDetails:http://airccse.org/journal/ijdms/1011s1.pdf

VolumeLink:http://airccse.org/journal/ijdms/Currentissue.html

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DATA MINING TECHNIQUES: A SOURCE FOR CONSUMER BEHAVIOR ANALYSIS

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ABSTRACT

Various studies on consumer purchasing behaviors have been presented and used in real problems. Data mining techniquesare expected to bea more effective toolforanalyzing consumerbehaviors. However, the data mining method has disadvantages as well as advantages. Therefore, it is important to select appropriate techniques to mine databases. The objective of this paper is to know consumer behavior, his psychological condition at the time of purchase and how suitable data mining method apply to improve conventional method. Moreover, in an experiment, association rule is employed to mine rules for trusted customers using sales data in a super market industry

KEYWORDS

Consumerbehavior,Datamining,AssociationRule,Supermarket

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