

Three-Step DataMining Model To Support Mobile Service

YESHWANTH RAO BHANDAYKER¹

¹Senior Java/J2EE Programmer Analyst, FINANCE: Trading Application, Vanguard , Malvern, PA - 19355, USA

Received: March 03, 2019

Accepted: April 07, 2019

ABSTRACT: : Under the big data period, making complete use of the advantages of mobile phones will certainly allow the co-creation of worth to understand the raised client retention. Thus, the ability to procedure large data postures a fascinating however important difficulty for the modern company. It ends up being immediate research study problems result to successfully as well as successfully performs data mining devices relative to a substantial quantity of data to fulfill the business critical goals. In this paper, we present multi representative systems from the data mining element, complied with by the worth of data mining from a Customer Relationship Management (CRM) facet. Ultimately, we recommend a three-step data-mining model to sustain mobile service, which can assist the business to remove prospective worth to handle CRM efficiently.

Key Words: System Multi-Agent, Big Data, Customer Relationship Management.

I. INTRODUCTION

Several of the literary works recommends that CRM is comprehended as a customer-oriented monitoring method in which in- development systems offer info to sustain functional, logical, as well as collective CRM procedures as well as therefore add to consumer earnings as well as retention [3] Numerous data sources are mushrooming. Gathering consumers' info and also examining the info making use of data mining methods are the key procedures of CRM. Presently, frequently utilized data mining strategies consist of category, outlier evaluation, k-means algorithm, regression evaluation, as well as clustering. Likewise, designs making use of Bayesian networks, choice trees, fabricated semantic networks and also organization policies have actually been promoted in lots of business to offer for CRM via evaluating important consumers' details. On the basis of this success, this paper will certainly concentrate on the conversation regarding an additional data mining model to essence data worth successfully. This data mining method has 3 actions consisting of making use of K-means to cluster large data. Additionally, we generalize data to concentrate on pertinent characteristics by means of utilizing a user-defined limit for the details loss estimation, and also details gain proportion estimation approach to choose trees for removing the prospective beneficial understanding objective

With the boosting use of mobile phones and also advancement of Web, internet search engine holding varied streams of details have actually produced unmatched spread data. As opposed to standard data-computing gadgets, large details need a premium data-processing technology to attain high-speed data moving as well as a combination. Such a wave of info that has overcapacity on data mining and also combination compared to standard data source administration system allows data.

Big data is additionally called "substantial data". Big data processing has a greater demand for the rate. Big data has 4 highlights: Volume, Variety, Velocity, as well as Worth. Individuals aspire to search for routine qualities via checking out all pertinent data. Throughout the big data age, everybody is a big factor of data. The large sources of data consist of, yet are not simply restricted to the following: social media sites, such as Weibo, We Talk, email, video clip, audio, internet scanning, GENERAL PRACTITIONER, web traffic tracking systems, as well as various other media. Customers are increasing their electronic impact and also developing even more data whenever they utilize these media. Individual info, consuming behaviors, choices, as well as also pertinent social networking will certainly be determined under big data age. Undoubtedly, such a data collection, as well as mining, are valuable for the organization by offering useful hints for future calculated administration.

Consumers are increasing their online impacts thoroughly, that makes it difficult to draw out data worth with data collection as well as data mining. Because of the dispersed data sources ingrained based upon heterogeneous systems, the enterprise is encountering troublesome difficulties. Just how to proceed with data mining properly has actually tested business to penetrate for brand-new innovations with more powerful processing power to locate the worth that concealed inside data. The Multi-Agent System (MAS)

makes it much easier to obtain one of the most appropriate outcomes for individuals by processing large data right into a specific thinking engine. A M.A.S. is a system made up of numerous engaging smart representatives within an atmosphere. Comparing To Smart Representative (IA), M.A.S. increases the collaboration and also interaction in between IAs as the details CPU. Customers can get exact target details in a prompt way using the support of brand-new technology.

Enterprises can have a far better understanding of consumers with incorporating as well as examining different data such as historic purchase documents, location, the regularity of internet scanning as well as various other data. Retail can utilize big data processing and also evaluation to accomplish the need projecting, cost as well as merchandising optimization;

Production can utilize big data evaluation to function in the direction of item personalization, brand-new item advancement, and also supply chain monitoring; Medical companies can utilize data processing to execute illness administration and also initial medical diagnosis; Federal government can make use of data evaluation to accomplish criminal offense avoidance, fraudulence discovery, as well as earnings Optimization. The company can tailor product or service with the highest possible ROI by targeting prospective consumers properly. Every one of these circumstances specified over can be credited to advantages brought by efficient Customer Relationship Management (CRM) via big data mining. It is not surprising that reliable CRM is extremely essential for any kind of company based upon its prospective financial advantages.

II. RELATEDWORKS

A. *The Cooperation Mechanism of Multi-Agent Systems(MAS)*

M. A.S. is an electronic system made up of several communicating smart representatives within an atmosphere. The smart representative belongs to the Distributed Artificial Intelligence (DAI), which accomplishes goal-directed habits via sensor-based monitoring and also actuators-orientated activity as the details CPU. Using modern related networking systems, an IA has the ability to connect, work together, or perhaps to bargain with various other IAs with semantic thinking ability [2, 5, 6, 9] M.A.S. has actually enhanced a great deal on data moving as well as combination compared to IA. M.A.S. can speed up the collaboration as well as interaction amongst various smart representatives [27] For M.A.S., just how to guarantee the independent attribute of every IA as a systematic action has actually ended up being a difficulty. Based upon the relevant investigates, social freedom is thought to be among one of the most vital habits worrying the communications amongst the representatives in M.A.S. [10, 18] To put it simply, fostering of objectives is a representation of social freedom. However, it is difficult for specific IA to incorporate enormous data in a prompt way to offer customers one of the most beneficial details precisely based upon its restricted ability. The good news is, the M.A.S. can be the smart supervisor as the info CPU because of its capacity of straightening the collaboration or arrangement in between various IAs [26]

Simply put, the M.A.S. can ask for various IAs to collaborate for issue resolving in a reliable method. One IA can entrust its job or duty to the various other IAs based upon collaboration objective or specialized feature. Additionally, IA can select its smart companion based upon interactive systems and also data sources sustain. Certainly, these IAs imitate a genuine analytical group. There might be some problems with IAs throughout this participation procedure. It is lengthy to manage settlement in between various IA systems. One intermediary system that functions as the communicator, as well as choice manufacturer amongst IAs, is exceptionally crucial as well as purposeful under the big data period. The good news is, the M.A.S. serves as such a duty to route IAs to comply and also work out with each various other to supply customers one of the most helpful details in a prompt fashion. Under the big data period, high precision, as well as high performance, are bottom lines for data mining technology.

B. *Big Data and Data Mining inCRM*

For service, data mining can be considered as the technology that can be made use of for classifying consumers based upon various qualities such as acquiring habits, mindsets to offer for future efficient service approach and also CRM technique [13].

Regarding the CRM in company, just how to establish a client account via searching for patterns in a consumer data source is the bottom line. Organizations can accomplish targeted advertising techniques with the targeting of particular promos to existing as well as possible clients. Likewise, organizations can proceed with market-based evaluation precisely. With data mining, sellers can establish which items to supply as well as exactly how to present them within a shop. Additionally, services can hold client retention by identifying attributes of a consumer that is most likely to leave for a rival. Additionally, some banks such as financial institutions and also insurance provider can attain fraudulence discovery with recognizing possibly deceitful deals. The success of the above objectives can not endure without efficient data mining features.

The frequently made use of data mining techniques consist of however are not simply restricted to a category, clustering, regression, organization regulations, the uncommon discovery as well as various other approaches or designs.

With the raising use smartphones, individuals are increasing their impacts thoroughly, from internet scanning, keywords input in internet search engine as well as clickstream within the website, to online deal, online video clip, and also the factor of access to the website. Such enormous data needs a remarkable data-processing technology to accomplish high-speed data moving as well as assimilation.

Intent below, companies have actually been spending billions of bucks in order to boost the software and hardware systems for mobile business to produce even more individualized solutions for clients. Mobile applications that target a solution arrangement will certainly remain in line with the core expertise of service. Nonetheless, literately, time urgency has actually been determined as a value-added feature of the mobile network [20, 22] As a result, mobile solutions under the big data period has actually placed a greater demand on data processing rate. A wave of info that has overcapacity on data mining as well as assimilation compared to standard data source monitoring system allows data. The big data period supporters greater needs on data combination and also evaluation, which press the advancement of advanced data evaluation modern technologies. The procedure of removing beneficial info via penetrating for routine patterns of data based upon efficient data evaluation innovations is data mining.

Data mining is a computational procedure that intends to refine unpredictability with finding routine patterns from quantities of data based upon various modern technologies such as artificial intelligence, stats and also various other techniques. Furthermore, from the CRM element, based upon client's altering requirement as well as behavior actions, just how to remove valuable data to recognize target consumers has actually ended up being the bottom line.

III. RESEARCHANALYSIS

A. *Data Mining Model from CRMRespect*

The mushrooming use multimedia will certainly produce even more info, consist of both organized as well as disorganized data, and also these data will certainly remain to raise the rapid development. Varied data sources, as well as nature, has actually made it be an obstacle to evaluate these data for drawing out prospective helpful info. Gathering client info and also evaluating the info making use of data mining strategies are the key procedures of CRM.

CRM maximizes productivity, profits, as well as client contentment by arranging around client sections, promoting consumer-pleasing actions, as well as applying customer-centric organization versions [17] CRM is understood as a customer-oriented monitoring technique in which details systems offer info to sustain functional, logical, and also joint CRM procedures as well as hence add to client success and also retention [3] On the various other hand, customer habits evaluation is interested in the research of communications amongst the customers, items as well as procedures such as buying, brand name selection, and so on. Just how to evaluate these data via clustering, incorporating, as well as modeling is the primary issue of this paper.

Because of the relevance of CRM in the company, this paper will certainly suggest a model clarify its payments for the company. This model is a three-step procedure, consisting of utilizing K-means to cluster enormous data; Generalising data to concentrate on appropriate features through utilizing a user-defined limit for the details loss estimation; Determining info gain proportion to choose trees for removing prospective useful expertise objective.

B. *K-means Algorithm-BasedClustering*

Clustering is a procedure for organizing a collection of items right into courses (or collections) to discover teams of clients with comparable habits within a team, yet is extremely different to things in various other collections. Clustering approaches suggested in various literary works consist of ordered clustering, disruptive clustering, density-based clustering with DBSCAN algorithm, grid-based clustering, and also model-based clustering. As one of the most regular clusterings approaches, the objective of K-means is organizing data right into K collections based upon criterion K as well as target data. After getting numerous data arbitrarily, we can imagine that each data represents one typical variety of one cluster. After that, organizing various other data based upon their range to these recognized ordinary number. Once more, repeat this procedure to obtain a brand-new ordinary number for every cluster, up until the standard feature is assembled to obtain the most effective clustering outcome. Contrasted to various other clustering approaches, K-means technique is much more effective based upon its straightforward application concept and also quick rate.

C. AttributeSelection

Actually, within a team of consumers (cluster), not all initial qualities apply (or interesting) as well as several of them ought to be disposed of. Right here once again, we established an entropy-based method to make a decision whether a feature is essential when it comes to an offered team of clients utilizing a user-defined limit for the details loss. As a step for the "details" shared by a characteristic, we will certainly utilize the decline based upon the regularity of the worths taken by that quality within an offered cluster By using the clustering strategy to a provided quality within a provided team of consumers, we get a collection of collections each embedding worths for that characteristic that is really comparable; as well as consequently taken into consideration as being a solitary worth taking place a lot of times as the dimension of the matching cluster.

D. Learning CustomerModel

In this 3rd and also the last action, our primary purpose is modeling the expertise installed in each currently minimized cluster (or team of clients). Numerous methods have actually been recommended in the literary works consisting of the neural web- jobs, organization policies, self-organizing Function Maps as well as various other methods. In our method, we will certainly utilize choice trees in order to remove one of the most essential functions(qualities) for each and every team of clients on the basis of the very first 2 actions mentioned over.

E. Experiment

For our study function, we can presume that we were offered a collection of data regarding clients' possible acquiring habits, on the basis of the clustering as well as characteristic option procedure mentioned over, we can presume that the picked most useful features for gathered teams are A, B, C, D, E, and also each feature consist of some various worths. As an example, feature A might consist of X1, X2, as well as X3 ... B might consist of Y1, Y2, as well as Y3 ... the exact same, various other insightful characteristics additionally consist of various aspects. For the comfort of our study, we can think right here that all type of variable elements under A characteristic worth might be classified right into 3 basic arrays: a1, a2, a3, the very same, various other variable elements under various features additionally might be classified right into vary- ent arrays: quality B can consist of b1, b2, b3 ... C can consist of c1, c2, c3 ... D can consist of d1, d2, d3 ... E might consist of e1, e2, e3 ... After that, it is time to utilize info gain as well as info decline computation technique to choose trees for removing possible beneficial expertise function (See Table 1). This paper will certainly utilize this presumed data source as an instance to show the application of the suggested model.

Table 1. Attributes value of customers' sample

	A	B	E	D	C
1	X1	Y1	E1	Z1	C1
2	X2	Y2	E1	Z2	C2
3	X3	Y3	E2	Z3	C1
4	X4	Y4	E2	Z3	C2
5	X5	Y5	E1	Z4	C2
6	X6	Y6	E1	Z5	C2
7	X2	Y7	E2	Z6	C2
8	X7	Y8	E1	Z7	C2
9	X8	Y9	E1	Z8	C2
10	X9	Y2	E2	Z9	C2
11	X10	Y8	E1	Z10	C2
12	X11	Y3	E1	Z11	C2
13	X12	Y9	E2	Z12	C2
14	X13	Y3	E1	Z13	C1
15	X14	Y2	E1	Z14	C2
16	X15	Y1	E1	Z15	C2
17	X16	Y3	E1	Z16	C2
18	X17	Y3	E2	Z17	C1
19	X18	Y1	E2	Z18	C1
20	X19	Y5	E1	Z19	C2
21	X20	Y7	E1	Z20	C2
22	X21	Y4	E2	Z21	C1
23	X22	Y9	E1	Z22	C2
24	X23	Y8	E1	Z23	C1
25	X24	Y9	E2	Z24	C1

Usage feature worth of "A" received Table 1 as an instance, think that these huge data under this cluster can be credited to 3 various teams: a1, a2, as well as a3. The exact same, we can generalize various other characteristics such as "B", "E", "D" and also "C" (See Table 2).

Table 2. Generalized attributes value of sampled customer group

	A	B	E	D	C
1	a1	b1	e1	d1	c1
2	a2	b2	e2	d3	c2
3	a3	b3	e1	d2	c1
4	a1	b1	e2	d3	c2
5	a2	b3	e1	d3	c2
6	a1	b2	e1	d1	c2
7	a2	b1	e2	d1	c2
8	a1	b2	e1	d3	c2
9	a3	b3	e1	d2	c2
10	a2	b1	e2	d2	c2
11	a1	b1	e1	d1	c2
12	a2	b2	e1	d2	c2
13	a2	b2	e2	d2	c2
14	a1	b2	e1	d1	c1
15	a2	b1	e1	d3	c2
16	a1	b2	e1	d2	c2
17	a2	b1	e1	d1	c2
18	a1	b2	e2	d3	c1
19	a2	b1	e2	d1	c1
20	a1	b3	e1	d3	c2
21	a2	b1	e1	d1	c2
22	a2	b2	e2	d3	c1
23	a2	b2	e1	d3	c2
24	a1	b3	e1	d3	c1
25	a3	b2	e2	d3	c1

F. Explaining Attributes-DecisionTrees

Below we utilize choice trees technique since we do not need to make any kind of adjustments on the target data established. Choice trees can make data evaluation refines much easier by revealing the Mapping connection in between things buildings as well as item worths in one aesthetic and also intuitionist means. Subsequently, contrasted to various other data versions, this approach is less complicated to comprehend, as well as can plainly clarify the mapping connection- ships amongst data within a family member brief time. On the basis of both actions specified over, translating the qualitative and also measurable details that are inscribed on the table is an additional major job. This paper generally suggests using choice trees to discuss the worth concealed in big data. This paper advises using the details gain-ID3 computation technique. The specifics are revealed as adhering to:

From Table 2, it is simple to recognize that there are 2 various worths for the C quality: so we determine m= 2. Below we can recognize these 2 worths are C1, as well as C2. So 17 examples are consisted of in C1, and also 8 examples are consisted of in C2. Our objective is penetrating for the most crucial examination characteristic of choice trees as the origin node. Because of information-gain and also info gain rate-based computation. This origin node can be gotten with determining as well as contrasting the details gain price amongst various characteristics.

G. Experiment Results andDiscussion

Based upon the above instance as well as gone over methods, it is simple to locate that quality "E" has the highest possible details gain, so this quality will certainly be considered as one more brand-new node for more facility of choice trees. After taking care of P2 making use of the exact same technique, the decision tree is developed as complies with:

Currently, it is simpler for the organization to locate the routine pattern by evaluating the possible important details. From the above choicetree, we can discover the complying with patterns: 1. The C2 is much more prominent amongst consumers in the d3 team. 2. C1 is a lot more preferred amongst d2 team clients and also d1 team clients 3. Amongst various feature B worths, C2 is much more prominent for the a1 team, however, C1 is much more prominent for a2 team consumers and also a3 team consumers.

Based upon the above evaluation, an organization can notice that the target team of C2 is a1 team clients with d3 quality, and also the target teams of great C1 must be a2 team clients as well as a3 team clients. Subsequently, it is the correct time to speed up promotion regarding recently C2 amongst a1 team clients;

specifically amongst a1 participants with d3 quality and also advertise freshly C1 excellent amongst d2 team consumers and also a3 team consumers.

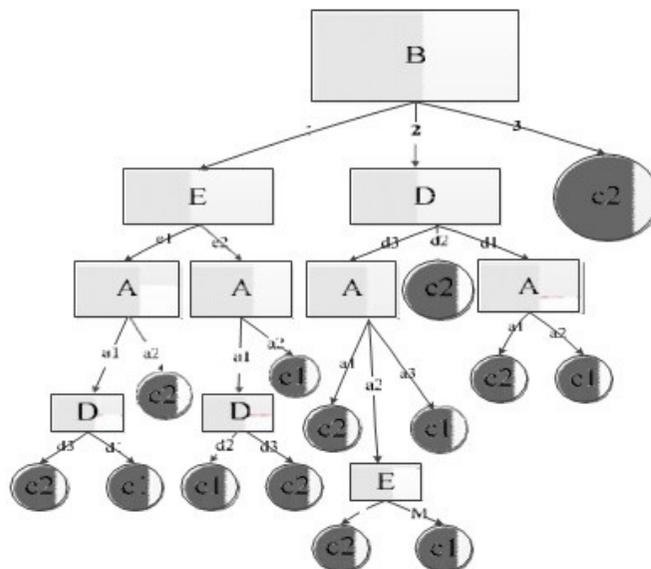


Fig. 2. Decision tree-based clustering model

Based upon such a data-mining model, companies can draw out useful info to accomplish exact advertising and marketing methods. Companies can advertise customized advertising approaches via searching for internal normal patterns on the basis of data clustering as well as assimilation. It is no question that organisation can decrease the procedure price, as well as maximize the clients' retention price for much better CRM.

IV. CONCLUSIONS

Based upon the above conversation regarding this recommended three-step data mining model consisting of utilizing K-means to cluster large data; Generalising data to concentrate on pertinent characteristics through making use of a user-defined limit for the info loss estimation; Computing info gain proportion to choose trees for drawing out prospective useful expertise function. A lot more significantly, such a data-mining model streamlines the data evaluation procedure and also gives a rational basis for evaluation. Unarguably, the data mining model can bring fantastic worth for CRM, despite service, the federal government, or for public organizations. CRM will certainly function successfully with the rapid data combination and also data mining. This model likewise establishes a great structure for future data study under "big data era".

References

1. D. Anthony, H. Oscar, J. Gandy, "All that glitters is not gold: digging beneath the surface of data mining," Journal of Business Ethics, Vol. 40, No. 4, pp. 373- 386,2002
2. I.Bittencourt,E.Costa,M.Silva,E.Soaes,"Acomputationalmodelfordevelopingsemanticweb-basededucationalsystems,"KnowledgeBasedSystems,Vol. 22, No. 2, pp. 302-315, 2009
3. A. Bueren, R. Schierholz, L. Kolbe, W. Brenner, "Customer Knowledge Management: improving performance of customer relationship management with knowledge management," in Proceedings of The 37th IEEEHawaiiInternational Conference on System Sciences, IEEE Computer Society Press, 2004.
4. C. Hung, and C. Tsai, "Market segmentation based on hierarchical self-organizing map for markets of multimedia on demand," Expert System, pp. 780-787, 2008
5. B. Lotfi, A. Romdhane, N. Fadhel, B. AyeB, "Building customer models from business data: an automatic approach based on fuzzy clustering and machine learning," International Journal of Computational Intelligence and Application, Vol. 8, No. 4., pp. 445-465,2009.
6. N. Hsieha, "A data mining and behavioral scoring model for analyzing bank customers," Expert Systems with Applications, Vol. 27, No. 4, pp. 623-633, 2004.
7. Anusha Medavaka, P. Shireesha, "Analysis and Usage of Spam Detection Methodin Mail Filtering System" in "International Journal of Information Technology and Management", Vol. 12, Issue No. 1, February-2017 [ISSN : 2249-4510]

8. Anusha Medavaka, P. Shireesha, "Review on Secure Routing Protocols in MANETs" in "International Journal of Information Technology and Management", Vol. VIII, Issue No. XII, May-2015 [ISSN : 2249-4510]
9. Anusha Medavaka, P. Shireesha, "Classification Techniques for Improving Efficiency and Effectiveness of Hierarchical Clustering for the Given Data Set" in "International Journal of Information Technology and Management", Vol. X, Issue No. XV, May-2016 [ISSN : 2249-4510]
10. Anusha Medavaka ,P. Shireesha, "Optimal framework to Wireless Rechargeable Sensor Network based Joint Spatial of the Mobile Node" in "Journal of Advances in Science and Technology", Vol. XI, Issue No. XXII, May-2016 [ISSN : 2230-9659]
11. Anusha Medavaka, "Enhanced Classification Framework on Social Networks" in "Journal of Advances in Science and Technology", Vol. IX, Issue No. XIX, May-2015 [ISSN : 2230-9659]
12. Anusha Medavaka, P. Shireesha, "A Survey on Traffic Cop Android Application" in "Journal of Advances in Science and Technology", Vol. 14, Issue No. 2, September-2017 [ISSN : 2230-9659]
13. Anusha Medavaka, Dr. P. Niranjan, P. Shireesha, "USER SPECIFIC SEARCH HISTORIES AND ORGANIZING PROBLEMS" in "International Journal of Advanced Computer Technology (IJACT)", Vol. 3, Issue No. 6 [ISSN : 2319-7900]
14. Anusha Medavaka, "Monitoring and Controlling Local Area Network Using Android APP" in "International Journal of Research", Vol. 7, Issue No. IV, April-2018 [ISSN : 2236-6124]
15. Yeshwanth Rao Bhandayker, "AN OVERVIEW OF THE INTEGRATION OF ALL DATA MINING AT CLOUD-COMPUTING" in "Airo International Research Journal", Volume XVI, June 2018 [ISSN : 2320-3714]
16. Siripuri Kiran, 'Decision Tree Analysis Tool with the Design Approach of Probability Density Function towards Uncertain Data Classification', International Journal of Scientific Research in Science and Technology (IJSRST), Print ISSN : 2395-6011, Online ISSN : 2395-602X, Volume 4 Issue 2, pp.829-831, January-February 2018. URL : <http://ijsrst.com/IJSRST1841198>
17. Yeshwanth Rao Bhandayker , "Artificial Intelligence and Big Data for Computer Cyber Security Systems" in "Journal of Advances in Science and Technology", Vol. 12, Issue No. 24, November-2016 [ISSN : 2230-9659]
18. Sugandhi Maheshwaram, "A Comprehensive Review on the Implementation of Big Data Solutions" in "International Journal of Information Technology and Management", Vol. XI, Issue No. XVII, November-2016 [ISSN : 2249-4510]
19. "Method for activating research and institutional assignments Big Data Services," National Information Society Agency, (2013).
20. Si-Jung Kim, "Double Secure Layers Architecture for Privacy Protection in Big Data," In proceedings of the 2014 International Conference on Platform and Service (PlatCon-14), (2014) January.
21. "An Analysis of Technology Demand for Big Data based Privacy Information Protection", Industry Academic Cooperation Foundation Sungshin women's university, (2012) December.
22. Suresh Kumar Mandala, Neelima Gurrupu, Mahipal Reddy Pulyala, "A Study on the Development of Machine Learning in Health Analysis", Indian Journal of Public Health Research & Development, volume 9, Number 12, December 2018, [ISSN-0976-0245(Print)-ISSN-0976-5506 (Electronic)]
23. Suresh Kumar Mandala, Mahipal Reddy Pulyala and Sanjay Pachouri, "Being a Smart Sapien with Information Centric Networking and Cloud Computing", International Journal of Pure and Applied Mathematics, Volume 117, No. 21, 2017, 243-255, [ISSN: 1311-8080 (printed version)]
24. Suresh Kumar Mandala, Sanjay Pachouri, "performance evaluation of multi stage attacks prediction", Journal of Advanced Research in Dynamical and Control Systems, Vol. 9, September 2017, JARDCS Special Issue On Engineering Technology.
25. Thota Mounika, Mandala Suresh kumar, "Document Proximity: Keyword Query Suggestion Based On User Location", International Journal of Research, Volume 04, Issue 14, November 2017, [e-ISSN: 2348-6848 ,p-ISSN: 2348-795X].
26. Syeda Sobia Farees , M. Suresh Kumar, "A Novel Approach for Protecting Location Information in Geosocial Applications", IJEMR, Vol 1, Issue 2, November 2016 [ISSN:2456-5083]
27. Suresh Kumar Mandala, Sanjay Pachouri, "A Reviewed Study on Financial Cyber Crime and Frauds", International Journal of Advances in Arts, Sciences and Engineering (ijoaase.com), Volume 4 Issue 9, Sep 2016, [ISSN. 2320-6144 (Online)]
28. Ajmera Rajesh, Siripuri Kiran, "Anomaly Detection Using Data Mining Techniques in Social Networking" in "International Journal for Research in Applied Science and Engineering Technology", Volume-6, Issue-II, February 2018, 1268-1272 [ISSN : 2321-9653], www.ijraset.com
29. Sugandhi Maheshwaram , "An Overview of Open Research Issues in Big Data Analytics" in "Journal of Advances in Science and Technology", Vol. 14, Issue No. 2, September-2017 [ISSN : 2230-9659]
30. Siripuri Kiran, Ajmera Rajesh, "A Study on Mining Top Utility Itemsets In A Single Phase" in "International Journal for Science and Advance Research in Technology (IJSART)", Volume-4, Issue-2, February-2018, 637-642, [ISSN(ONLINE): 2395-1052]
31. Yeshwanth Rao Bhandayker, "Security Mechanisms for Providing Security to the Network" in "International Journal of Information Technology and Management", Vol. 12, Issue No. 1, February-2017, [ISSN : 2249-4510]
32. Sugandhi Maheshwaram, S. Shoban Babu , "An Overview towards the Techniques of Data Mining" in

- "RESEARCH REVIEW International Journal of Multidisciplinary", Volume-04, Issue-02, February-2019 [ISSN : 2455-3085]
33. Yeshwanth Rao Bhandayker , "A Study on the Research Challenges and Trends of Cloud Computing" in "RESEARCH REVIEW International Journal of Multidisciplinary ", Volume-04, Issue-02, February-2019 [ISSN : 2455-3085]
 34. Sriramoju Ajay Babu, Dr. S. Shoban Babu, "Improving Quality of Content Based Image Retrieval with Graph Based Ranking" in "International Journal of Research and Applications", Volume 1, Issue 1,Jan-Mar 2014 [ISSN : 2349-0020]
 35. Dr. Shoban Babu Sriramoju, Ramesh Gadde, "A Ranking Model Framework for Multiple Vertical Search Domains" in "International Journal of Research and Applications" Vol 1, Issue 1,Jan-Mar 2014 [ISSN : 2349-0020].
 36. Mounika Reddy, Avula Deepak, Ekkati Kalyani Dharavath, Kranthi Gande, Shoban Sriramoju, "Risk-Aware Response Answer for Mitigating Painter Routing Attacks" in "International Journal of Information Technology and Management", Volume VI, Issue I, Feb 2014 [ISSN : 2249-4510]
 37. Sugandhi Maheshwaram, "A Review on Deep Convolutional Neural Network and its Applications" in "International Journal of Advanced Research in Computer and Communication Engineering", Vol. 8, Issue No. 2, February-2019 [ISSN : 2278-1021], DOI 10.17148/IJARCCCE.2019.8230
 38. Yeshwanth Rao Bhandayker. "An Overview : Security Solutions for Cloud Environment." International Journal for Scientific Research and Development 7.2 (2019): 1596-1598.
 39. Yeshwanth Rao Bhandayker. "An Overview Of Cyber Security", International Journal of Research, vol. 8, Issue. 3 (2019): 2236-6124.
 40. Sugandhi Maheshwaram,"A Study On The Challenges In HandlingBig Data", International Journal of Research, vol. 8, Issue. 3 (2019): 2236-6124.
 41. Malik S., Huet F., and Caromel D., "Cooperative Cloud Computing in Research and Academic Environment usingVirtualCloud,EmergingTechnologies(ICET),"in Proceedings of the International Conference on Digital Object Identifier,2012.
 42. Patel A., Birla M., and Nair U., "Addressing Big Data Problem using Hadoop and Map Reduce, Engineering (NUiCONE)," in Proceedings of the International Conference on Digital Object Identifier, pp. 1-5,2012.
 43. Shoban Babu Sriramoju, Dr. Atul Kumar, "A Competent Strategy Regarding Relationship of Rule Mining on Distributed Database Algorithm" in "Journal of Advances in Science and Technology" , Vol-II, Issue No-II, November 2011 [ISSN : 2230-9659]
 44. Shoban Babu Sriramoju, Dr. Atul Kumar, "Allocated Greater Order Organization of Rule Mining utilizing Information Produced Through Textual facts" in "International Journal of Information Technology and management" , Vol-I, Issue-I, August 2011 [ISSN : 2249-4510]