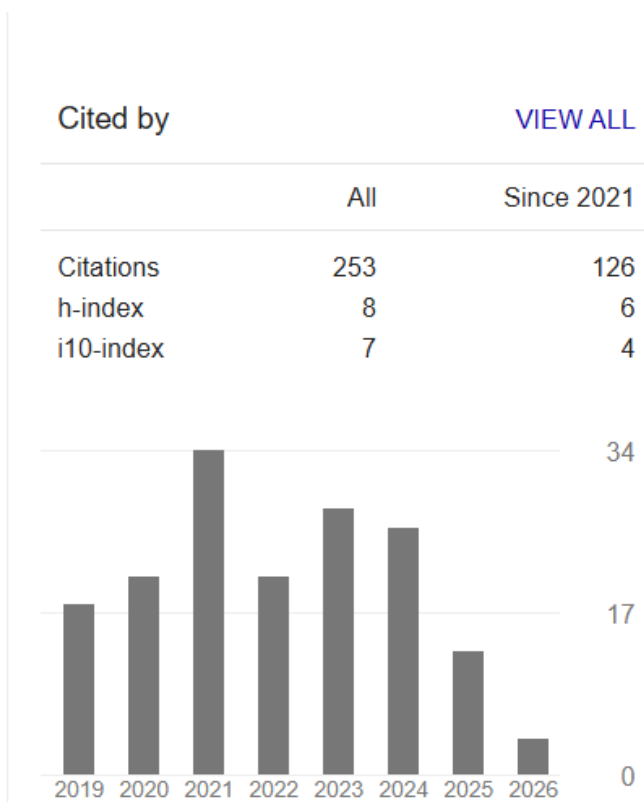


TOP CITE ARTICLES IN INFORMATION TECHNOLOGY MAY 2026

International Journal of Computational Science and Information Technology (IJCSITY)

<http://airccse.org/journal/ijcsity/index.html>

ISSN:2320-7442(Online);2320-8457(Print)



A Review Towards DDoS Prevention and Detection Methodology

Subramaniam T.K And Deepa.B, Nandha Engineering College, India

ABSTRACT

Denial of Service (DoS) or Distributed-Denial of Service (DDoS) is major threat to network security. Network is collection of nodes that interconnect with each other for exchange the Information. This information is required for that node is kept confidentially. Attacker in network computer captures this information that is confidential and misuse the network. Hence security is one of the major issues. There are one or many attacks in network. One of the major threats to internet service is DDoS (Distributed denial of services) attack. DDoS attack is a malicious attempt to suspending or interrupting services to target node. DDoS or DoS is an attempt to make network resource or the machine is unavailable to its intended user. Many ideas are developed for avoiding the DDoS or DoS. DDoS happen in two ways naturally or it may due to some botnets .Various schemes are developed defense against to this attack. Main idea of this paper is present basis of DDoS attack. DDoS attack types, DDoS attack components, survey on different mechanism to prevent DDoS.

KEYWORDS

DDoS, Security, botnets

ForMoreDetails: <https://airccse.org/journal/ijcsity/papers/3315ijcsity01.pdf>

VolumeLink: <https://airccse.org/journal/ijcsity/Current2015.html>

REFERENCES

- [1] Wei Wei, Feng Chen, Yingjie Xia, and Guang Jin, "A Rank Correlation Based Detection against Distributed Reflection DoS Attacks", IEEE Communications Letters, Vol. 17, No. 1, January 2013.
- [2] zhiyuan Tan, Aruna Jamdagni, Xiangjian He, Senior Member, IEEE, Priyadarsi Nanda, Member, IEEE, and RenPingLiu, Member, IEEE, "A System for Denial-of-Service Attack Detection Based on Multivariate Correlation Analysis.", IEEE Transactions On Parallel And Distributed Systems, Vol. 25, No. 2, February 2014.
- [3] Sanjeev Khanna, Santosh S. Venkatesh, Member, IEEE, Omid Fatemieh, Fariba Khan, and Carl A. Gunter, Senior Member, IEEE, Member, ACM, "Adaptive Selective Verification: An Efficient Adaptive Countermeasure to Thwart DoS Attacks", IEEE/ACM Transactions On Networking, Vol. 20, No. 3, June 2012.
- [4] Moti Geva, Amir Herzberg, and Yehoshua Gev |, "Bandwidth Distributed Denial of Service: Attacks and Defenses", Copublished by the IEEE Computer and Reliability Societies January/February 2014 .
- [5] Zahid Anwar and Asad Waqar Malik, "Can a DDoS Attack Meltdown My Data Center? A Simulation Study and Defense Strategies", Ieee Communications Letters, Vol. 18, No. 7, July 2014.
- [6] Shui Yu, Senior Member, IEEE, Yonghong Tian, Senior Member, IEEE, Song Guo, Senior Member, IEEE, and Dapeng Oliver Wu, Fellow, IEEE, "Can We Beat DDoS Attacks in Clouds?", IEEE Transactions On Parallel And Distributed Systems, Vol. 25, No. 9, September 2014.
- [7] Xinlei Ma and Yonghong Chen, "DDoS Detection Method Based on Chaos Analysis of Network Traffic Entropy", IEEE Communications Letters, Vol. 18, No. 1, January 2014.

AUTHORS

T.K.SUBRAMANIAM received the B.Tech degree in Information technology from Nandha Engineering College in 2014. He is currently doing his M.E Computer science and Engineering in Nandha engineering college, Erode, India.



B.DEEPA received the M.E degree in computer science and engineering from Nandha Engineering College in 2011. She is currently working as Assistant professor in Nandha engineering college, Erode, India



Mine Blood Donors Information Through Improved K-Means Clustering

Bondu Venkateswarlu¹ and Prof G.S.V.Prasad Raju²

¹Department of Computer Science and Systems Engineering, Andhra University,
Visakhapatnam-530003,India.

² School of Distance Education, Andhra university, Visakhapatnam-530003,India.

ABSTRACT

The number of accidents and health diseases which are increasing at an alarming rate are resulting in a huge increase in the demand for blood. There is a necessity for the organized analysis of the blood donor database or blood banks repositories. Clustering analysis is one of the data mining applications and K-means clustering algorithm is the fundamental algorithm for modern clustering techniques. K-means clustering algorithm is traditional approach and iterative algorithm. At every iteration, it attempts to find the distance from the centroid of each cluster to each and every data point. This paper gives the improvement to the original k-means algorithm by improving the initial centroids with distribution of data. Results and discussions show that improved K-means algorithm produces accurate clusters in less computation time to find the donors information.

KEYWORDS

Clustering, means, Euclidean distance, centroid, datasets

ForMoreDetails: <https://airccse.org/journal/ijcsity/papers/1313ijcsity02.pdf>

VolumeLink: <https://airccse.org/journal/ijcsity/Current.html>

REFERENCES

- [1] Jaipur National University, Jaipur, “Predicting the Number of Blood Donors through their Age and Blood Group by using Data Mining Tool”
- [2] N. Koteswara Rao, G. Sridhar Reddy “ Discovery of Preliminary Centroids Using Improved KMeans Clustering Algorithm”
- [3] K. RAJENDRA PRASAD and Dr. P.GOVINDA RAJULU, “A survey on clustering technique for datasets using efficient graph structures” International Journal of Engineering Science and Technology Vol. 2 (7), 2010, 2707-2714.
- [4] Jiawei Han M. KAMBER, Data Mining Concepts and Techniques, Morgan Kaufmann Publishers, An Imprint of Elsevier,
- [5] Margaret H. Dunham, Data Mining- Introductory and Advanced Concepts, Pearson Education, 2006.
- [6] McQueen J, “Some methods for classification and analysis of multivariate observations,” Proc. 5th Berkeley Symp. Math. Statist. Prob., (1):281–297, 1967.
- [7] Pang-Ning Tan, Michael Steinback and Vipin Kumar, Introduction to Data Mining, Pearson Education, 2007. Transactions on Information Theory, 28(2): 129-136.
- [8] Fahim A.M, Salem A. M, Torkey A and Ramadan M. A, “An Efficient enhanced k-means clustering algorithm,” Journal of Zhejiang University, 10(7):1626–1633, 2006.

An Energy Efficient Countermeasure Against Multiple Attacks Of The False Data Injection Attack And False Hello Flood Attack In The Sensor Networks

Su Man Nam¹ and Tae Ho Cho²

¹College of Information and Communication Engineering, Sungkyunkwan University,
Suwon 440-746, Republic of Korea

²College of Information and Communication Engineering, Sungkyunkwan University,
Suwon 440-746, Republic of Korea

ABSTRACT

Nodes are easily exposed from generated attacks on various layers because they compose simple functions in sensor networks. The false data injection attack drains finite energy resource in a compromised node, and the false HELLO flood attack threatens constructed routing paths in an adversary node. A localized encryption and authentication protocol (LEAP) was developed to prevent the aforementioned attacks through the use of four keys. However, when these attacks occur simultaneously, LEAP may not prevent damage from spreading rapidly throughout the network. In this paper, we propose a method that addresses these attacks through the use of four types of keys, including two new keys. We also improve energy consumption while maintaining a suitable security level. The effectiveness of the proposed method was evaluated relative to that of LEAP when multiple attacks occur. The experimental results reveal that the proposed method enhances energy saving by up to 12% while maintaining sufficient detection power.

KEYWORDS

wireless sensor networks, security attack detection, false data injection attacks, hello flood attacks.

ForMoreDetails: <https://airccse.org/journal/ijcsity/papers/1313ijcsity03.pdf>

VolumeLink: <https://airccse.org/journal/ijcsity/Current.html>

REFERENCES

- [1] Akyildiz, I.F., Weilian Su, Sankarasubramaniam, Y., and Cayirci, E., "A survey on sensor networks," *Communications Magazine, IEEE*, vol.40, no.8, pp. 102- 114, Aug 2002.
- [2] Zhu, S., Setia, S., and Jajodia, S., "LEAP: efficient security mechanisms for large-scale distributed sensor networks," *Proceedings of the 10th ACM conference on Computer and communications security, ACM*, 62-72, 2003.
- [3] Xiaojiang Du; Hsiao-Hwa Chen, "Security in wireless sensor networks," *Wireless Communications, IEEE*, vol.15, no.4, pp.60-66, Aug. 2008.
- [4] H.Y. Lee and T.H. Cho, "A Scheme for Adaptively Countering Application Layer Security Attacks in Wireless Sensor Networks," *IEICE Transactions on Communications*, vol. E93-B, no. 7, pp. 1881-1889, Jul. 2010.
- [5] Zhen Yu and Yong Guan, "A Dynamic En-route Filtering Scheme for Data Reporting in Wireless Sensor Networks," *Networking, IEEE/ACM Transactions on*, vol.18, no.1, pp.150-163, Feb. 2010.
- [6] Sencun Zhu; Setia, S., Jajodia, S., and Peng Ning, "An interleaved hop-by-hop authentication scheme for filtering of injected false data in sensor networks," *Security and Privacy, 2004. Proceedings. 2004 IEEE Symposium on*, pp. 259- 271, 9-12 May 2004.
- [7] Sencun Zhu, Setia, S., Jajodia, S., and Peng Ning, "An interleaved hop-by-hop authentication scheme for filtering of injected false data in sensor networks," *Security and Privacy, 2004. Proceedings. 2004 IEEE Symposium on*, vol., no., pp. 259- 271, 9-12 May 2004.
- [8] Karlof, C. and Wagner, D., "Secure routing in wireless sensor networks: attacks and countermeasures," *Sensor Network Protocols and Applications, 2003. Proceedings of the First IEEE. 2003 IEEE International Workshop on*, pp. 113- 127, 11 May 2003.
- [9] Hamid, A., Mamun-Or-Rashid, and Choong Seon Hong, "Defense against lap-top class attacker in wireless sensor network," *Advanced Communication Technology, 2006. ICACT 2006. The 8th International Conference*, vol.1, pp.5 pp.-318, 20-22 Feb. 2006.
- [10] Crossbow technology Inc., "<http://www.xbow.com>"
- [11] Intanagonwiwat, C., Govindan, R., and Estrin, D., "Directed Diffusion: A scalable and robust communication paradigm for sensor networks," *MOBICOM, ACM*, pp. 56-67, 2000.
- [12] Fan Ye, Chen, A., Songwu Lu, and Lixia Zhang, "A scalable solution to minimum cost forwarding in large sensor networks," *Computer Communications and Networks, 2001. Proceedings. Tenth International Conference on*, pp.304-309, 2001.

AUTHORS

Su Man Nam received his B.S. degrees in computer information from Hanseo university, Korea, in February 2009 and M.S degrees in in Electrical and Computer Engineering from Sungkyunkwan University in 2013, respectively. He is currently a doctoral student in the College of Information and Communication Engineering at Sungkyunkwan University, Korea. His research interests include wireless sensor network, security in wireless sensor networks, and modelling & simulation.



Tae Ho Cho received the Ph.D. degree in Electrical and Computer Engineering from the University of Arizona, USA, in 1993, and the B.S. and M.S. degrees in Electrical Engineering from Sungkyunkwan University, Republic of Korea, and the University of Alabama, USA, respectively. He is currently a Professor in the College of Information and Communication Engineering, Sungkyunkwan University, Korea. His research interests are in the areas of wireless sensor network, intelligent systems, modeling & simulation, and enterprise resource planning



Analysis & Prediction of Sales Data in SAP-ERP System Using Clustering Algorithms

S.HanumanthSastry and Prof.M.S.PrasadaBabu

Department of Computer Science & Systems Engineering, Andhra University,
Visakhapatnam, India

ABSTRACT

Clustering is an important data mining technique where we will be interested in maximizing intracluster distance and also minimizing intercluster distance. We have utilized clustering techniques for detecting deviation in product sales and also to identify and compare sales over a particular period of time. Clustering is suited to group items that seem to fall naturally together, when there is no specified class for any new item. We have utilized annual sales data of a steel major to analyze Sales Volume & Value with respect to dependent attributes like products, customers and quantities sold. The demand for steel products is cyclical and depends on many factors like customer profile, price, Discounts and tax issues. In this paper, we have analyzed sales data with clustering algorithms like K-Means & EM which revealed many interesting patterns useful for improving sales revenue and achieving higher sales volume. Our study confirms that partition methods like K-Means & EM algorithms are better suited to analyze our sales data in comparison to Density based methods like DBSCAN & OPTICS or Hierarchical methods like COBWEB.

KEYWORDS

ERP, Sale Order, EM, DBSCAN, K-Means, COBWEB, Hierarchical clustering, Optics

For More Details: <https://airccse.org/journal/ijcsity/papers/1413ijcsity07.pdf>

Volume Link: <https://airccse.org/journal/ijcsity/Current.html>

REFERENCES

- [2] —S. HanumanthSastry and —Prof. M.S.PrasadaBabul,—ERP implementation for Manufacturing Enterprises. —International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE) 3.4 (2013): pp. 18-24
- [3] Paul Harrigan, —2012 Academy of Marketing Conference Special Issue – Marketing: Catching the technology wave; Vol. 29, Issue. 5-6, 2013, Journal of Marketing Management
- [4] Jacob F, Ulaga W; —The Transition from product to service in business markets: An agenda for academic inquiry; Volume 37, Issue 3, May 2008, Pages 247-253
- [5] Mark Hall ,Jan Witten , Eibe Frank, —Data Mining Practical Machine Learning Tools & Techniques, January 2011 ; Morgan Kaufmann Publishers; pp: 278-315
- [6] Han., M.Kamber , —Introduction to Data Mining, Morgan Kaufman Publishers, 2006 ;pp: 380-423
- [7] —S.HanumanthSastry and —Prof.M.S.PrasadaBabul. —Cluster Analysis of Material Stock Data of Enterprises. —International Journal of Computer Information Systems (IJCIS) 6.6 (2013): pp. 8- 19
- [8] LiorRokach, OdedMaimon, —DATA MINING AND KNOWLEDGE DISCOVERY HANDBOOK, 2010, Springer USA; pp 322-350
- [9] Soman, Diwakar, Ajay, Data Mining Theory and Practicel;2006, Prentice Hall of India; pp:303-315
- [10] —S.HanumanthSastry and —Prof.M.S.PrasadaBabul. —Analysis of Enterprise Material Procurement Leadtime using Techniques of Data Mining. —International Journal of Advanced Research in Computer Science (IJARCS) 4.4 (2013): pp. 288-301

Computer-Aided Detection system for Hemorrhage contained region

Myat Mon Kyaw

Faculty of Information and Communication Technology
University of Technology (Yatanarpon Cybercity), Pyin Oo Lwin, Myanmar

ABSTRACT

This paper aims to introduce the automated method to detect and classify an abnormality (hemorrhage) of stroke in brain CT image. Initially, the image is pre-processed to remove film artifacts and skull region. Before the abnormality region is segmented, the image is pre-segmented. In this stage, the image is subdivided into four regions to find the region that has the possibility for inclusion of abnormal areas. Thus, the unnecessary regions are no need to search and segment. This paper proposes pre-segmentation steps for the detection of abnormal region in brain image. Then, abnormalities can be segmented by grouping homogeneous regions according to the predefined criteria. The accuracy of the segmentation results can be assessed by the specialist.

KEYWORDS

CT, Medical imaging, Hemorrhage, Infarct

ForMoreDetails: <https://airccse.org/journal/ijcsity/papers/1113ijcsity02.pdf>

VolumeLink <https://airccse.org/journal/ijcsity/Current.html>

REFERENCES

- [1] N. Mohd Saad, S.A.R. Abu-Bakar, Sobri Muda, M. Mokji, A.R. Abdullah, “ Fully Automated Region Growing Segmentation of Brain Lesion in Diffusion-weighted MRI”, IAENG International journal of computer science, 39;2, IJCS _39_2_03,2012.
- [2] T Kesavamurthy, Subha Rani and N Malmurugan, “EARLY DIAGNOSIS OF ACUTE BRAIN INFARCT USING GABOR FILTER TECHNIQUE FOR COMPUTED TOMOGRAPHY IMAGES”, Biomedical Soft Computing and Human Sciences, Vol.14, No.1, pp.11-16 (2009).
- [3] Mayank Chawla, Saurabh Sharma, Jayanthi Sivaswamy, Kishore L.T, “A method for automatic detection and classification of stroke from brain CT images”. ZHANG XiaoFeng, ZHANG CaiMing, TANG WenJing and WEI ZhenWen, “Medical image segmentation using improved FCM”, Vol. 55 No. 5: 1052–1061, May 2012.
- [5] T Kesavamurthy, S SubhaRani, “Pattern Classification using imaging techniques for Infarct and Hemorrhage Identification in the Human Brain”, Calicut Medical Journal 2006; 4(3):e1.
- [6] T. L. Tan, K. S. Sim, C. K. Tan¹, and A. K.Chong, “CT Image Enhancement by Colorization for Brain Infarct Detection”, Malaysia.
- [7] A. Padma and Dr.R. Sukanesh, “Automatic Diagnosis of Abnormal Tumor Region from Brain Computed Tomography Images Using Wavelet Based Statistical Texture Features”, International Journal of Computer Science, Engineering and Information Technology (IJCEIT), Vol.1, No.3, August 2011.
- [8] Sonali Patil, Dr. V. R. Udupi, “Preprocessing To Be Considered For MR and CT Images Containing Tumors”, IOSR Journal of Electrical and Electronics Engineering (IOSRJEEE), Volume 1, Issue 4 (July-Aug. 2012), PP 54-57.

Author

Myat Mon Kyaw was born in Mandalay Division, Myanmar, in 1987. The date of birth is August 20, 1987. She received the B.C.Sc (Bachelor of Computer Science) and M.C.Sc (Master of Computer Science) degrees in computer science from University of Computer Studies (Mandalay), Myanmar in 2006 and 2009, respectively. She is currently a candidate for the Ph.D degree in information technology at the University of Technology (Yatanarpon Cybercity), Myanmar. From 2010 to now, she is working at the faculty of Information and Communication Technology, University of Technology (Yatanarpon Cybercity) as a tutor. Her research interests include medical imaging, computer aided diagnosis system.



Knowledge-Based Fuzzy Inference System for Sepsis Diagnosis

Igodan Charles Efosa¹ and Akwukwuma V.V.N²

Department of Computer Science, Faculty of Physical Sciences, University of Benin,
P.O. Box 1154, Edo State, Nigeria.

ABSTRACT

In this study, a Fuzzy Inference System is developed to create a knowledge-based for the diagnosis and detection of sepsis using Matlab's fuzzy logic toolbox. The FIS consists of expert-specified input membership functions, output membership function, and IF-THEN rules. To validate our system, we tested it with the domain (medical) expert knowledge by comparing its performance with at least 10 hypothetical scenarios. The KB-FIS gave good answers in 8/10 scenarios and generated rules for decision support. The answers are qualitatively correct but quantitatively small. The fuzzy inference system designed performs as well as the medical experts under controlled conditions. With the methodology used in this study, it is hoped that it can assist in enhancing the knowledge-base system for proper, effective and early diagnosis and detection of sepsis

KEYWORDS

Fuzzy Inference System, Fuzzy Set Theory, sepsis, Knowledge-Based System, Neonatal.

ForMoreDetails: <https://airccse.org/journal/ijcsity/Current.html>

VolumeLink <https://airccse.org/journal/ijcsity/papers/1313ijcsity01.pdf>

REFERENCES

- [1] Adlassnig, K-P (2000) Proceedings of Erudit Workshop Fuzzy Diagnostic and Therapeutic Decision Sup-port. Vienna: Österreichische Computer Gesellschaft.
- [2] Fernando, L., Nascimento, C., Paloma, M., Rizol, R and Abiuzl, L (2009) “Establishing the risk of neonatal mortality using a fuzzy predictive model”, *Cad Saude Publicam Rio de Janeiro*, 25(9): 2043-2052.
- [3] Noor, M.J.M. (2004). Application of knowledge-based fuzzy inference system on high voltage transmission line maintenance. A thesis submitted for the degree of master of engineering.
- [4] Ortega, N.R.S. Sallum, P.C. Massad, E. (2000) “Fuzzy dynamical system in epidemic modeling”, *Kybernetes*; 29:201-18. Rudowski, R., Frostell, C and Gill, H. (1989) “A Knowledge-based support system for mechanical ventilation of the lungs”, *The KUSIVAR concept and prototype. Comput Methods Programs Biomed*, 30, 59.
- [6] Rutledge, G and Thomson, G (1991) “Ventplan: a Ventilator-Management Advisor”, *Proc. Annu Symp Comput Appl Med Care*, 869.
- [7] Sun, Y. Kohane, I. and Stark, A.R. “Fuzzy Logic Assisted Control of Inspired Oxygen in Ventilated Newborn Infants”, *AMIA, Inc.* 0195-4210 (1994).
- [8] Tan, T., Snowden, C. Evans, Baxter, G. and Brownlee, K.G (2013) “Fuzzy Logic Expert System for Neonatal Ventilation”, *Journal of Medical Engineering & Technology*. 21(2): 67-73.
- [9] Tong, D (1991) “Weaning patients from mechanical ventilation. A Knowledge-Based system approach. *Comput Methods Programs Biomed*, 38, 267.
- [10] Ward, L. (2012) Application and Testing of Modifications to the TREAT Sepsis Networks.

Authors

Igodan Charles Efosa, is a lecturer in the Department of Computer Science, University of Benin, Edo State, Nigeria. He has obtained his B.Sc. and Masters' degree in Computer Science. He is currently working towards his Ph.D. degree in machine learning. He has worked as system engineer/consultant and programme analyst for eight years and has taught in various institutions. His interests are in Data mining, knowledge warehousing, Expert system, and Soft-Computing and Machine Learning.

