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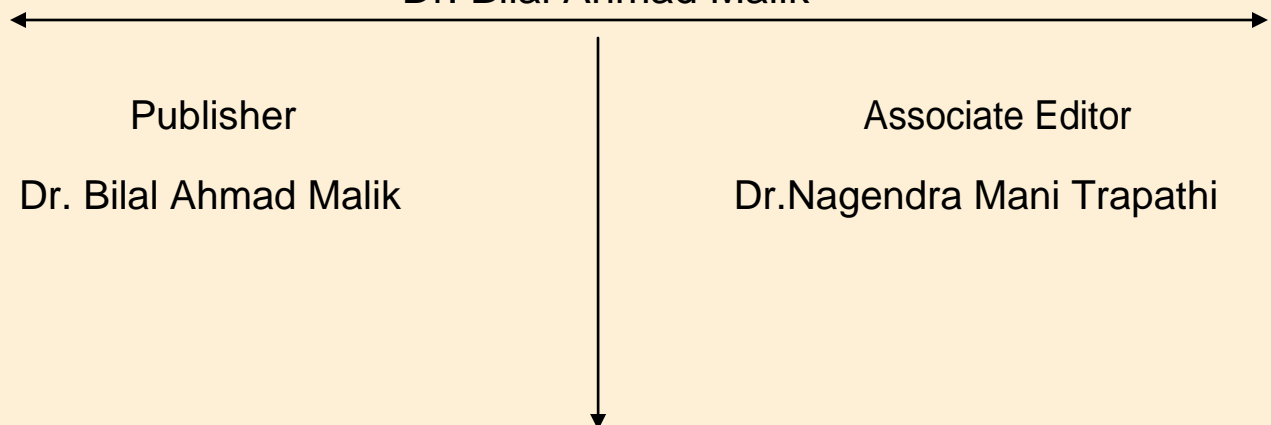
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VIDEO RETRIEVAL USING ACTION MAPPING BETWEEN FRAMES BASED ON WORD BAG FEATURE AND STRUCTURAL CONTENT MATCHING

RUPINDER KAUR*

***M.tech Scholar (CSE), CGC-COE, Landran, Punjab, India**

SHELLY PADDA**

****Assistant Prof. (CSE), CGC-COE, Landran, Punjab, India**

Abstract: Data mining is the field of computer science that deals with the knowledge discovery of database information. Patterns are extracted from the database by using various machine learning or artificial intelligence of the system. Data mining deals with the extraction of the data from the large database so that it can be used for the future use. Various techniques have been developed for the mining the data from the large database. This paper discusses the proposed method for the mining of the data from the database. The performance of the system has been analyzed on the basis of Efficiency, response time and match accuracy.

Key Words: CBVR, BOW, Mining, recognition, data retrieval

INTRODUCTION

Data mining is the field of computer system that deals with the extraction of particular data from the large database system. Data is extracted to get the meaningful information for the future prediction.

Data mining is also referred as the discovery of knowledge from the database. Data mining is widely used for the security purpose for example detection of frauds in the organization, risk, obtains the valid patters and relationships from the database for the better understanding of the system. Many organizations use data mining techniques to do their future planning's for better functioning of their organization.

Data mining helps in revealing the pattern regarding the data but it does not specify the significance of the patterns to the user. Data mining does not deals with the casual relationships between the data of the database it only studies the connection between the various variables and data in the database. Proper data analysis is performed by the data mining techniques .Various industries like banking, insurance, and medicine, sales, research uses data mining for various purposes. While in public sector data mining is used for detecting the frauds and waste of useful resources. Various issues faced by

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the data mining technique in extracting the useful from the large database are incompleteness and inaccuracy of data being studied, second main issue is the interoperability of the software used by various organizations for the data mining. Third issue for data mining is regarding the data i.e. the data has been analyzed for different purpose irrespective of the way for it was collected.

Encryption of data or images is performed to provide the security to the information being transferred over the internet .Since large numbers of hackers are present on the internet that can affect the information being transferred over the internet. For example sensitive information like credit card information, information regarding the transaction of bank or some social security numbers that are private to the user. Various encryption techniques have been developed that helps in protecting the confidential data from the use by some unauthorized authority. Ensuring the security and integrity of data over the computer networks is of great importance and is the growing need of concern. Data based market, network of defense; intellectual property etc needs preserve the data from the malicious intrusions.

Data mining deals with the various applications such as national security as well as cyber security. National security deals with the providing the security on the national basis for example preventing the attacks on the buildings, destruction of critical infrastructure for example power grid and telecommunication system. Cyber security deals with the security of computer system from Trojan horses and viruses that can affect the performance of the system.

APPLICATIONS OF DATA MINING

- In health care
- Market based analysis
- Education
- In medical science
- Web education

LITERATURE SURVEY

Shraddha K.Popat et al.[8] have efficiently done the comparative study of clustering techniques. Clustering is basically the challenge in data mining process for the discovery of data. Clustering is efficiently categorized into partitional clustering; density based clustering, hierarchal clustering. They have efficiently explained and compared various clustering techniques and their algorithms.

Mahmood Al-khassaweneh et al. [25] discussed in their work about the encryption technique that is based on the least square approximation. Image is encrypted using the normal encrypting technique but at the time of decrypting the least square approximation concepts are used .As a result the performance of the algorithm has been improved by

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using the least square algorithm and the security aspects of the algorithms are improved efficiently.

Atef Mermoul et al.[22] discussed in their work about the blind source separation based encryption technique (BSS) that deals with the encryption of the speech signal. The authors have worked on the subspace technique idea for non linear functions and key signal approach. The authors have efficiently worked on encryption and decryption process of the cryptography technique. It was analyzed that only the part of key parameters of secret encoding are required while decoding the text. It was analyzed that blind source separation based encryption works only if some plain text is fed as input to it.

Dahua Xie et al.[17] discussed in their work about the encryption technique that is enhanced by using the multiple Huffman table (MHT).This enhancement is basically done by using the key hopping method as earlier multiple Huffman table was vulnerable to the chosen plain text attack however these limitations were overcome by the use of advanced technique. As the algorithm has made the data secure for chosen plain text attacks. Security of the plain text was also proved by mathematical method using key hopping technique.

METHODOLOGY

In the proposed system based of image action mapping the RGB Colour model is used. Colour

image video frames normally are in three dimensional. RGB colour components are taken from each and every image.

In previous methods from base and references the most used form was the HOG and descriptor sets of features values for video retrieval system with not varying details, but study on varying detail system is not intense, according to the base approach the descriptor Gaussians introduced delay for retrieval for simple system. So, we propose to use a 3 way approach for classification and consider the word bag model value of R, G, and B layer for both query image and target images, the inter frame movement is calculated and thirdly the shape feature details.

These two extra values for each video are stored and considered as dataset. The following problems are proposed to be solved. Classification of retrieval properties, Time used in retrieval, efficiency of retrieval and match probability.

- Get the Video and perform initial pre processing
- The image dataset is then analyzed with a swarm of feature filtering networks based on proposed system of structural content and word bag with phase change.
- After performing S filtering for color, shape and size extraction the features are then sent to a local database for storage.

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- The database is then analyzed using aligning and filtering relevant features and reducing errors among the extracted features data
- Performing the inter frame feature matching analysis for extraction of the feature maps for each frame
- Select a query for retrieval of similar images from dataset of features and perform classification of response, feature match and retrieval efficiency.
- Perform comparative analysis with other processes

BLOCK DIAGRAM
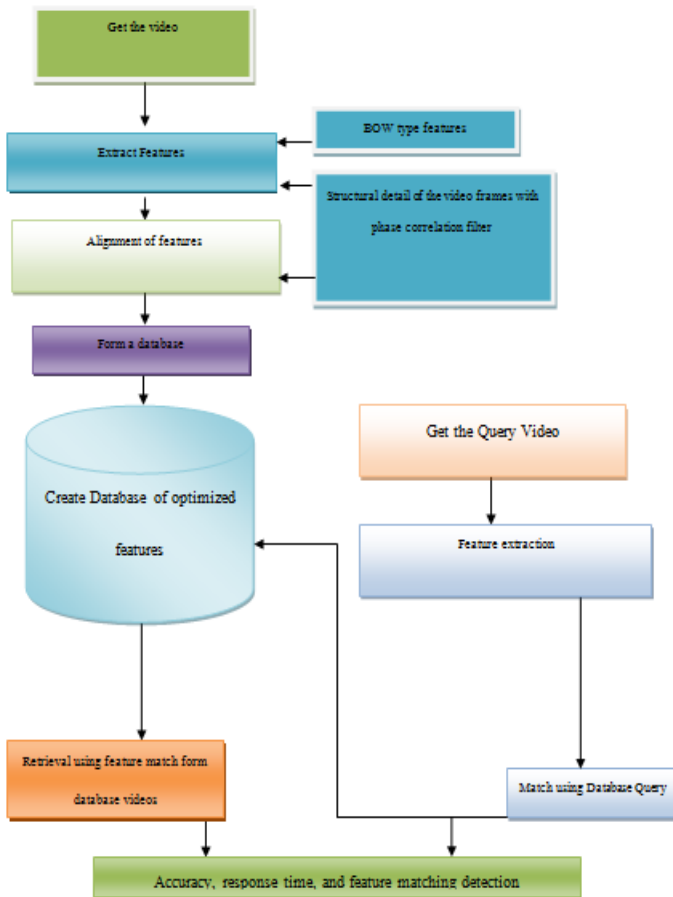
RESULTS AND DISCUSSION

Evaluation of our research work

The below given section analyzes the system efficiency in terms of visual output response to both Base and proposed system for feature query and feature extraction matching using proposed approach dataset and random query indexing through vector correlation response and efficiency calculation.

Results for the proposed and Base system query

Parameters – Results for 2 random query videos and dataset of 18 videos

Returned videos – 10

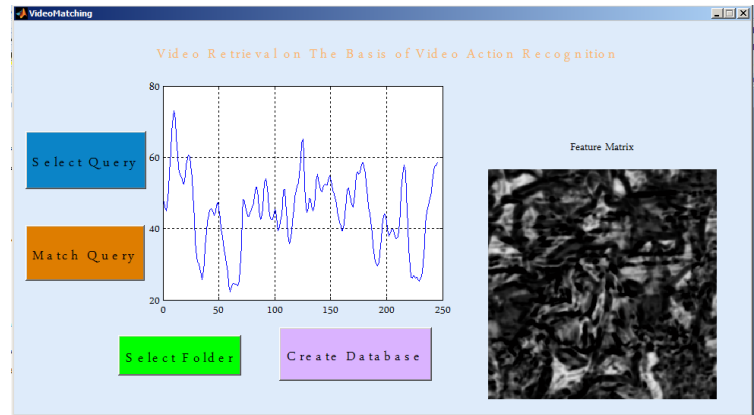**Figure 1 Shows output for Query image with random selection using Optimized Dataset System**

The above figure shows the returned response to query videos for the optimized system and can be seen that the returned videos are very significant to the query in terms of colour texture and graphic details though the dataset was not limited to these videos and had a mixed level of details, still the

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system retrieved the best queries and the following section shoes the results calculated by VECTOR CORRELATION and time based analysis of retrieval
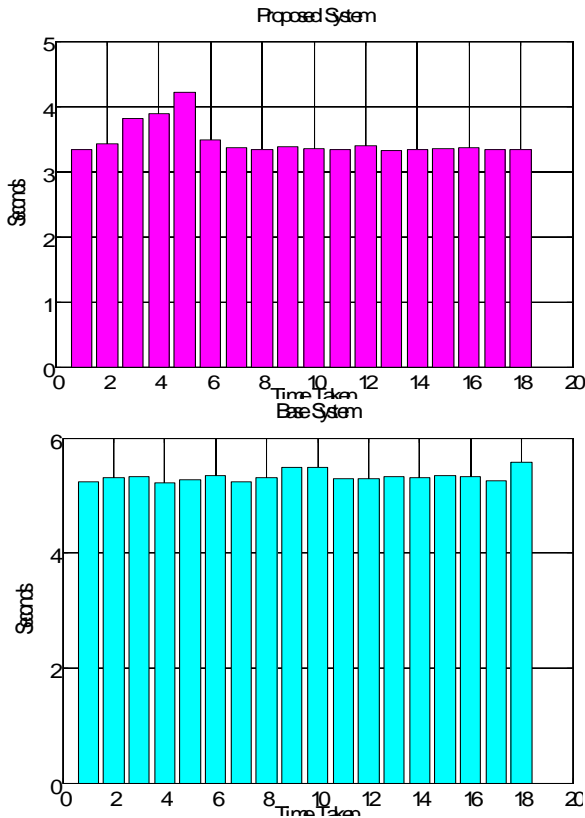

Figure 2 shows the comparison of the retrieval response and precision of system comparison both base and proposed systems (base in blue and proposed in black)

Table 1 Shows the comparison of the Precision and Response of the system (Base and Proposed)

ALGORITHM	PRECISION
Base	4.70
Proposed	4.75

The above figure shows the response to precision ratio for the proposed system (in triangle plot) and base system (in circle) for 2 random image queries for the optimized system and can be seen that the

efficiency of the proposed system is very significant and close to 1, starting at 0.8 precision response and the base precision is starting at 0.7 response rate, through this we can conclude that the proposed theory has enhanced the efficiency of the retrieval system, still the system retrieved the best queries and the following section shoes the results calculated by VECTOR CORRELATION and time based analysis of retrieval
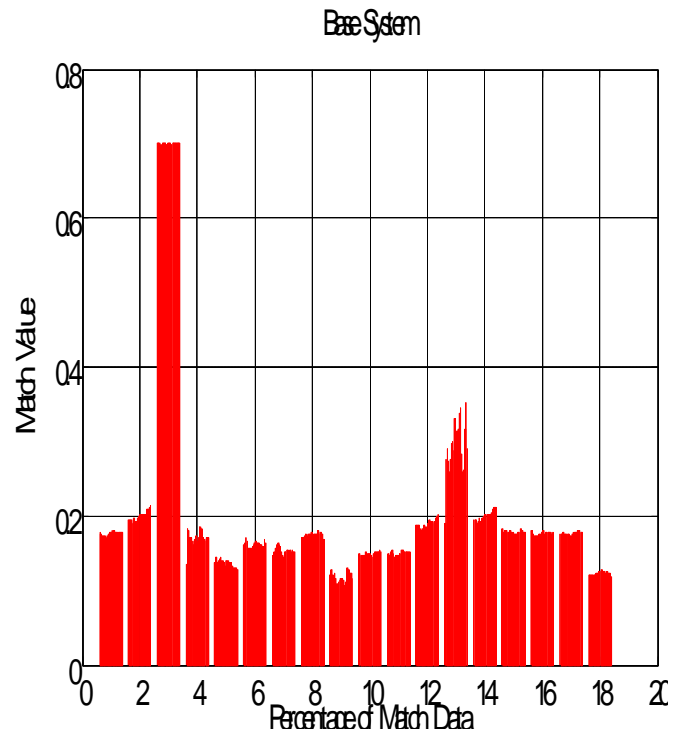

Figure 3 shows the efficiency response of base system for random 5 samples from query output videos

The above figure shows the efficiency response of the base system in terms of retrieval efficiency for random response for any 5 retrieved videos from proposed system, the system achieves full efficiency with 4th retrieval video and hence then achieves fully precise response

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Figure 4 shows the efficiency response of proposed system for random 5 samples from query output videos

The above figure shows the efficiency response of the proposed system in terms of retrieval efficiency for random response for any 5 retrieved videos from proposed system, the system achieves full efficiency with 3th retrieval video and hence then achieves fully precise response
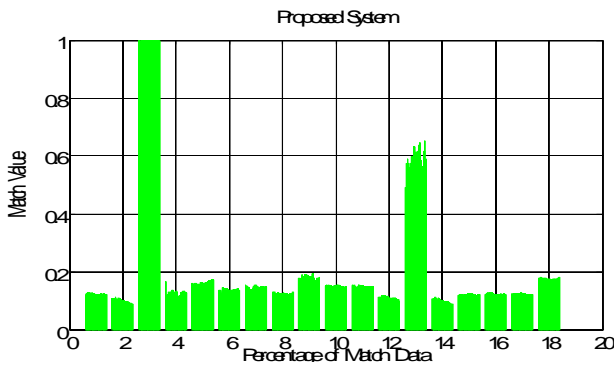

Figure 5 shows the time consumption in assessment, extraction and matching of the features extracted from query search videos and dataset videos

The figure shows the time required for processing the retrieval of videos for random query, the base system shows retrieval time of < 3 seconds for required video outputs, while that of the proposed systems shows > 1 seconds of response which marks a reduction in retrieval time and shows better efficiency in terms of time optimization response

Table 2 Shows the comparison of the time response of the Base and Proposed system

ALGORITHM	CONSUMED
TIME BASE	2.5
TIME PROPOSED	0.50

Figure 6 shows the efficiency response of base system for random 5 samples from query output videos

The above figure shows the efficiency response of the base system in terms of retrieval efficiency for random response for any 5 retrieved videos from proposed system, the system achieves full efficiency

with 4th retrieval video and hence then achieves fully precise response. The above figure also shows the efficiency response of the proposed system in terms of retrieval efficiency for random response for any 5 retrieved videos from proposed system, the system achieves full efficiency with 2th retrieval video and hence then achieves fully precise response
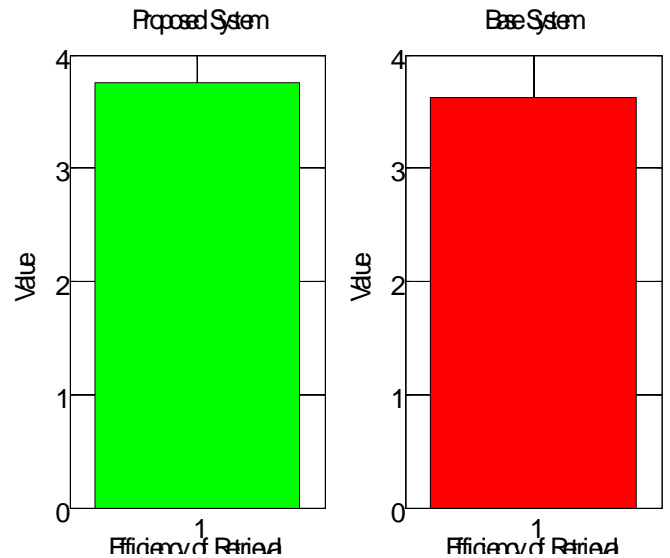
CONCLUSION

Data mining helps in predicting the future trends by analyzing the data and then making decisions according to that. Data mining helps in maintaining the defensive mechanism by preplanning of the information system. The proposed system deals with mining the data from the database. Video retrieval systems are a need for the growing demand for search and query and thus need to be very specific for the content to be retrieved, thus we have designed a system for query search and optimized feature extraction and classification, which involves the use of multiple features extraction using variance of image data, this variance feature extracted is then sent to the phase based correlation and sampling the needed features from the database. This vector classification has decreased the time required for the retrieval and has also improved the efficiency with respect to the data, this efficiency increased due to simplicity of the proposed approach of BOW combined with action details of the video content.

FUTURE WORK

 In the future we can add to this the SVM classification for the video retrieval. Moreover, we can find the correlations between various intra frame features. The paper gives a broad overview of feature extraction, optimization, and classification. Much work can be done across the variability among different information filters.

REFERENCE

[1] Ali radhi al essa and bach Christian "data mining and warehousing"ASEE2014 Zone I conference ,April 3-5,2014,university of Bridgeport, Bridgeport,CT,USA.

[2] Anand V.Saurkar, Vaibhav Bhujade, Priti Bhagat andAmit Khaparde " A review paper on various data mining techniques"International journal of advanced research in computer science and software engineering volune 4, issue 4 ,April 2014.

[3] Dr.Sohail Asghar and Khalid Iqbal "Automated data mining techniques: A critical literature review", International conference on Information Management and Engineereing,2009.

[4] Dina abdulaziz alhammadi, Mehmet sabih aksoy "Data mining in education –An experimental study" International journal of computer applications volume 62-No.15, January 2013.

[5] Neelamadhab Pandy, Pragnyaran Mishra and Rasmita Panigrahi "The Survey of Data Mining

North Asian International Research Journal of Sciences, Engineering & I.T. ISSN: 2454 - 7514   Vol. 2, Issue 11, Nov. 2016

IRJIF IMPACT FACTOR: 3.821

ApplicationsAnd Feature Scope" International Journal of Computer Science, Engineering and Information Technology (IJCSEIT), Vol.2, No.3, June 2012

[6] Rajiv Senapati, D.Anil Kumar "A Survey on Data Warehouse Architecture" International Journal of Innovative Research in Computerand Communication Engineering Vol. 2, Issue 8, August 2014

[7] Ramandeep Kaur, Amanpreet Kaur, Sarabjeet Kaur, Amandeep Kaur, Ranbir Kaur " An Overview of Database management System, Data warehousing and Data Mining" International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 7, July 2013

[8] Shraddha K.Popat and Emmanuel M. "Review and Comparative Study of Clustering Techniques" (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 5 (1) , 2014, 805-812.

[9] P Salman Raju, Dr V Rama Bai, G Krishna Chaitanya "Data mining: Techniques for Enhancing Customer Relationship Management in Banking and Retail Industries"International Journal of Innovative Research in Computer and Communication Engineering Vol. 2, Issue 1, January 2014.

[10] Jigna Ashish Patel "Classification Algorithms and Comparison in Data Mining"International Journal of Innovations & Advancement in Computer Science Volume 4, Special Issue May2015.

[11] Sachin Chaudhary, Devendra Prasad Murala and V. K. Srivastav "A Critical Review of Data Warehouse" Global Journal of Business Management and Information Technology.Volume 1, Number 2 (2011), pp. 95-103.

[12] Manish Sharma1, Atul Chaudhary, Manish Mathuria and Shalini Chaudhary " A Review Study on the Privacy Preserving Data Mining Techniques and Approaches" *International Journal of Computer Science and Telecommunications* [Volume 4, Issue 9, September 2013]

[12] Preeti Aggarwal ,M. M. Chaturvedi " Application of Data Mining Techniques for Information Security in a Cloud: A Survey" International Journal of Computer Applications (0975 – 8887) Volume 80 – No 13, October 2013

[13] Dileep Kumar Singh,Vishnu Swaroop "Review and Analysis of Data Security in Data Mining" IRACST - International Journal of Computer Science and Information Technology & Security (IJCSITS), Vol. 2, No.4, August 2012

[14] Rajdeep Bhanot and Rahul Hans " A Review and Comparative Analysis of Various Encryption Algorithms" International Journal of

North Asian International Research Journal of Sciences, Engineering & I.T. ISSN: 2454 - 7514   Vol. 2, Issue 11, Nov. 2016

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Security and Its Applications Vol. 9, No. 4 (2015), pp. 289-306

[15]   Bhavna Dharamkar, Rajni Ranjan Singh "A Review of Cyber Attack Classification Technique Based on Data Mining and Neural Network Approach" International Journal of Computer Trends and Technology (IJCTT) – volume 7 number 2– Jan 2014

[16]   Dahua Xie and C.-C. Jay Kuo, "Enhanced multiple Huffman table (mht) encryption scheme using key hopping" IEEE Transactions pp. 568-571,2004

[17]   Suhaila O. Sharif, L.I. Kuncheva, S.P. Mansoor ,"Classifying Encryption Algorithms Using Pattern Recognition Techniques" IEEE Transactions pp. 1168-1172,2010

[18]   Zhu Yuxi, Ruchun Cui, "Applied Study Based on OMAP Digital Fingerprint Encryption Method" IEEE Transactions pp. 1168-1172,2010

[19]   Huang, Jing, Zheng Zhen-zhuc, "A Method for Secure Real-Time Image Transmission Based on Optical Encryption" International conference on the Intelligent Signal Processing and Communication Systems, 2010

[20]   Mort Naraghi-Pour, Venkata Sriram Siddhardh Nadendla," Secure Detection in Wireless Sensor Networks Using a Simple Encryption Method" IEEE Transactions, 2011

[21]   Atef Mermoul, "An Iterative Speech Encryption Scheme Based On Subspace Technique" IEEE Transactions on Systems, Signal Processing and their Applications, pp. 361-364, 2011.

[22]   Osamu Watanabe, Akiko Nakazaki And Hitoshi Kiya," A Scalable Encryption Method allowing Backward Compatibility with JPEG2000 Images" IEEE Transactions pp. 6324-6347,2005.

[23]   W. Puech, J.M. Rodrigues," Analysis and Cryptanalysis of a Selective Encryption Method for JPEG Images" IEEE Transactions on Image Analysis for Multimedia Interactive Services,2007.

[24]   Mahmood Al-khassaweneh, Selin Aviyente,"Image Encryption Scheme Based on Using Least Square Approximation Techniques" IEEE Transactions, pp.108-111, 2008.

[25]   Syed Ali Naqi Gilani , M. Ajmal Bangash, "Enhanced Block Based Color Image Encryption Technique with Confusion" IEEE Transactions pp. 200-206,2008.

[26]   Seyed Hossein Kamali, Reza Shakerian, Maysam Hedayati, Mohsen Rahmani, "A New Modified Version of Advanced Encryption Standard(AES) Based Algorithm for Image Encryption", IEEE Transactions on Electronics and Information Engineering, Vol 1,pp.141-145,2010

[27]   Mohammad Reza Keyvanpour, Famoosh Merrikh-Bayat, "A New Encryption Method For

Secure Embedding In Image Watermarking" *IEEE Transactions on Advanced Computer Theory and Engineering* pp. 403-407,2011.

[28]   B.V. Rama Devi et. al., " A Novel Encryption Method for the Secure Transmission of Images" *International Journal on Computer Science and Engineering,* Vol. 02, No. 09, pp.2801-2804, 2010.

[29]   Xu E, Liangshan Shao, Guanghui Cao , Yongchang Ren , Tao Qu, "A New Method of Information Encryption" *IEEE Transactions* pp. 583-586,2009.

[30]   Ayman Alfalou and Ali Mansour, "A new double random phase encryption scheme to multiplex and simultaneous encode multiple images" *Applied Optics*, pp. 5933-5947, 2009.

[31]   Qiang Wang, Qun Ding , Zhong Zhang, Lina Ding, "Digital Image Encryption Research Based on DWT and Chaos" *IEEE Transactions* pp. 494-498,2008.

[32]   Yong-Hong Zhang, "Image encryption using extended chaotic sequences", *IEEE Transactions*

International Conference on Intelligent Computation Technology and Automation pp. 143-146,2011.

[33]   Monisha Sharma et. al. "Image Encryption Techniques Using Chaotic Schemes: A Review" *International Journal of Engineering Science and Technology,* Vol. 6,pp. 2359-2363, 2010.

[34]   Mintu Philip, Asha Das, " Survey: Image Encryption using Chaotic Cryptography Schemes" *International Jounal of Computer Applications,*2011.

[35]   Jun Lang, Ran Tao, Yue Wang, "Image encryption based on the multiple-parameter discrete fractional Fourier transform and chaos function" *Optics Communications*, Vol 283, pp. 2092-2096, 2010.

[36]   Jolly shah and Dr. Vikas Saxena, "Video Encryption: A Survey" *International Journal of Computer Science Issues*, Vol. 8, pp. 525-534, 2011.

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