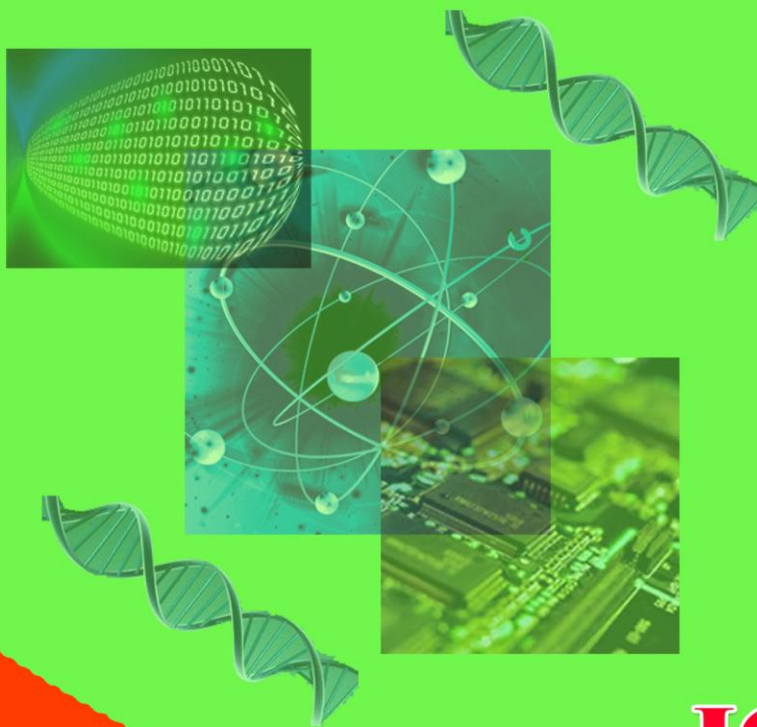


# INTERNATIONAL JOURNAL OF CURRENT RESEARCH AND ACADEMIC REVIEW

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**DECEMBER-2016**



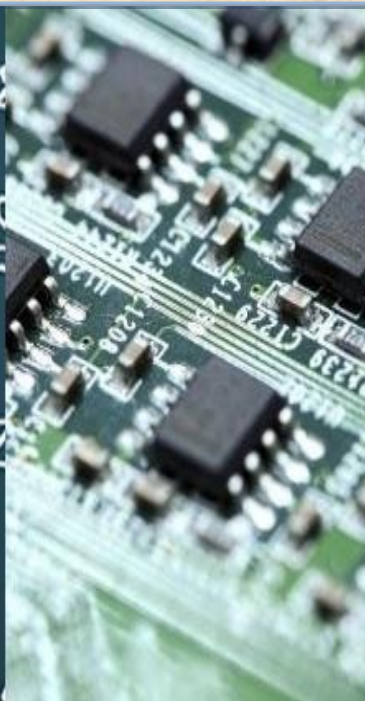
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**JOURNALS**

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**2016 -17**

**NATIONAL CONFERENCE ON  
COMPUTATIONAL  
CONVOLUTION IN INTELLIGENT  
SYSTEMS AND MATHEMATICS**



**Department of Computer Science,  
Information Technology, BCA  
and Mathematics (Shift I & II)**

**NATIONAL CONFERENCE  
ON COMPUTATIONAL  
CONVOLUTION IN INTELLIGENT  
SYSTEMS AND MATHEMATICS  
(IJCRAR-2016)**

**ABSTRACT PROCEEDINGS**



**Organised by**

Department of Computer Science, Information  
Technology, BCA and Mathematics (Shift I & II)

Dr. MGR Janaki College of Arts and Science for Women

“Sathyabama MGR Maligai” 11 & 13, Durgabai Deshmukh Road,  
RA Puram, Chennai – 600028



# ABOUT THE COLLEGE

Dr. MGR Janaki College was born out of the visionary zeal of Smt. Janaki Ramachandran, who desired to convert the Sathya Studio premises into college for women. The mission of the college is empowerment of women through education and imparting of life skills. The college is committed to the holistic development of students by providing a platform for showcasing their talents in performing arts, sports, literary and cultural activities. The college believes in preserving and nurturing our indigenous values and ethos while maintaining openness to external influence.

Affiliated to the University of Madras, the college was founded in 1996 with 70 students and 16 faculty members. It has grown rapidly to its present status of a front ranking educational institution with more than 2000 students and 100 staff members.

*"Excellence through Diligence"*

The motto of our college reflects the principle that both Dr. MGR and Mrs. Janaki Ramachandran believed in. We create an atmosphere in which students can work diligently in such an atmosphere.



## **EDITORIAL REPORT**

*“Gaining Knowledge is the first step to wisdom. Sharing it, is the first step to humanity”*

The department of Computer Science, Computer Application, Information Technology and Mathematics takes immense delectation in organizing and releasing our Conference proceedings.

Our coalesced effort delves further into the latest and recent research and developments in computational, analytical and mathematical fields.

Our goal is to encourage researchers, academicians and students to come up with their original work and enlighten their thoughts with other presentations. Keeping the above in mind we have put together the conference proceedings with the work of various authors in their areas of research.

We express our gratitude towards our management, Our Correspondent, Chairman, Principal, Dean of Academics and Dean of Students for their constant motivation and encouragement. We would also like to thank our colleagues for their wishes. And last but not the least our department members for their dedicated cooperative work without which we could not have made this possible. Our heartfelt thanks go to our efficient students for their prodigious support and work.

Ms. V.R. Viju  
Ms. K.L. Sumathy  
Ms.V.Agnes Lavanya  
Ms. S.Uma Shankari  
**(Editorial Committee)**



# Dr. MGR JANAKI

## College of Arts and Science for Women

"Excellence Through Diligence"



**Dr. Latha Rajendran**  
Correspondent

### **MESSAGE**

*"Alone we can do little; together we can do so much"*

**- Helen Keller**

I am happy to learn that the departments of Computer Science, IT, Computer Applications and Mathematics jointly are organizing a National Conference with the theme "Computational Convolutions in Intelligent systems and Mathematics".

I hope this conference provides a useful opportunity to the research scholars and the participants to deliberate upon issues on computational problems in the field of Computer Technology and Mathematics.

I extend my best wishes to the organizers for making available their knowledge for a wider audience with the publication of the research papers.

I wish the Conference all Success.

# DR. MGR JANAKI COLLEGE OF ARTS & SCIENCE FOR WOMEN

**Dr. R.Manimekalai**  
**PRINCIPAL**

**Date: 04.01.2017**



## **MESSAGE**

I would like to congratulate the Departments of Computer science, Computer applications and Mathematics for organizing the National Conference on “Computational Convolutions in Intelligent systems and Mathematics”.

The science of understanding how these systems operate and interact with one another is increasingly important. These advances can only be realized by gaining a deeper understanding of how systems operate. Major achievements in this area over the last decade have built expectations for further major advances. I am sure the great opportunity provided by this conference will be utilized by the participants.

I extend my best wishes for the success of this conference.

**Dr. R. Manimekalai**

# **THEME OF THE CONFERENCE**

The theme of the two days National conference titled “Computational Convolution in Intelligent Systems and Mathematics” provides a platform for the presentation of new advances and research results in the fields of Computer Science and Mathematics. The Conference helps in bringing together leading researchers, academicians and students in the domains of interest from around the state. The topics of interest to the conference include, but are not limited to:

- Artificial Intelligence
- Cloud Computing
- Big Data Analytics
- Nano Technology
- Digital Image Processing
- Neural Networks
- Mobile Computing
- Data Mining
- Algebra & Number Theory
- Analytical Papers
- Fuzzy & Graph Theory
- Mathematical Modeling
- Optimization Techniques
- Differential Equations & Other Related Topics



# National Conference on Computational Convolution in Intelligent Systems and Mathematics

**IJCRAR 2016**  
**4 & 5 January 2017**

## SPECIAL LECTURES

<b>S.NO</b>	<b>INVITED SPEAKER</b>	<b>TITLE</b>
<b>IJCRAR/PL/01</b>	<b>Britto L Marceline</b> Director, Co-founder and CEO of Synapticdots Solutions Private Limited, 34, 4th Cross Street, Chennai, Tamilndau, India	Cloud Computing Opportunities
<b>IJCRAR/PL/02</b>	<b>Dr.R.Loganathan</b> Prof. HOD, Department of Computer Science and Engineering, HKBK College of Engineering, Bengaluru- 560045, India	Opinion Mining
<b>IJCRAR/PL/03</b>	<b>Ms. Hema Swamy</b> Regional Director, SR Asia Chennai, India	Issues in Social Networking
<b>IJCRAR/PL/04</b>	<b>Dr. A.Jaya</b> Professor, Department of Computer Applications, B.S.Abdur Rahman University, Chennai - 48, India	Role of Ontology in Artificial Intelligence

## INVITED ABSTRACTS

<b>Abstract No.</b>	<b>Author(s)</b>	<b>Title of the paper</b>
IJCRAR/PP/01	Ananthi Sheshasaayee and N. Menaka	An analysis of the computer techniques in educational technology to enhance the learning skills
IJCRAR/PP/02	R. Frizilin and A.Muthukumaravel	A Comparative Study about Filtering Techniques in Removal of Noisy Pixels in Digital Images
IJCRAR/PP/03	P. Renuka	Big Data - An Survey
IJCRAR/PP/04	V.R. Viju and R.Radha	Extracting Features from an Image using Mathematical Morphology Image processing Tools
IJCRAR/PP/05	N. Shyamaladevi	Data Mining in Business Persepective – An Overview
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IJCRAR/PP/09	D. Suganya and S.Sujitha	Robust Data Hiding in Video using Forbidden Zone and Selective Embedding
IJCRAR/PP/10	K. Sutha and G.M. Kadhar Nawaz	Energy Efficient RAID Cloud Storage System on Green Data Center
IJCRAR/PP/11	S. UmaShankari and M.Chidambaram	Recommendation System for Information Overloaded Social Networks Using Collaborative Filtering Technique
IJCRAR/PP/12	R. Priyavani	Enhanced Round Robin Algorithm for improving CPU Efficiency
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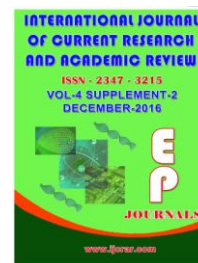
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IJCRAR/PP/23	M. Maragatham and P.Lakshmi Gayathri	Multi Attribute Decision Making Using Einstein Operations
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IJCRAR/PP/25	V. Vishnupriya and J.BaskarBabujee	On Graph Coding through Pair Labeling
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IJCRAR/PP/27	N.S. Kothai	Technical Skills – An Analysis for the Teacher and the Taught
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Invited Lectures

IJCRAR/PL/01

### Cloud Computing Opportunities

**Britto L Marceline**

Director, Co-founder and CEO of Synapticdots Solutions Private Limited, 34, 4th Cross Street, Chennai, Tamilnadu, India

E-mail: [blm@synapticdots.com](mailto:blm@synapticdots.com)



#### Abstract

Technological advancements in Cloud Computing, Mobile Apps, Internet of Things, 3D & 4D printings bring unique job opportunities for Students. Business Intelligence, Machine Learning, Artificial Intelligence, social connectedness and collaborative problem solving are business solutions through Cloud Infrastructure.

Public Cloud computing infrastructure today helps students not only to experiment or simulate but also to build industry ready products and solutions. The concept of learning has moved from traditional class room type of teaching to online self healing type of model. Today the problem is not lack of information but filtering information to the one students desire to study and excel.

With internet ready devices available always, students have an opportunity to learn new technology, language and tools from their colleges, home, on road or wherever they are.

Such is the power of Cloud Computing, it helps transform one's ideas into demonstrable products, dream to realization, knowledge to jobs and resume to profiles.

#### Cloud Opportunities

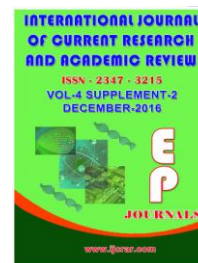
Cloud computing helps solving problems and brings effective solutions to those problems to millions in every sectors that need ICT (Information & Communication Technology). Sectors like Ecommerce, Healthcare, Manufacturing, Government, Agriculture, Defense, Aerospace, Rocket Science use basic to advance software using cloud infrastructure. Every roles played in the industry from software developer to testers and managers to CEO must possess knowledge of Cloud computing today to advance their careers and business goals in a global competitive environment.



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So Education must transform students with Cloud knowledge for transforming their ideas into implementation. It must help them in creating better profiles to add to their resume. It must help students to involve in Industry projects so they are job ready. It must enhance its own Lab with Cloud, Communication and Internet infrastructure and change times tables for Industry participation.

Synapticdots Solutions Private Limited ([www.in2hrs.com](http://www.in2hrs.com)), Adyar, Chennai, a Cloud Solution company, has created a business model to involve students as Interns and offers them highly effective internship programs to make them Industry ready through Knowledge, Idea Transformation, Building Profile. These programs are structured to make them Job Ready in Cloud and Mobile computing.

### **What is Cloud?**

Cloud is an virtual IT infrastructure for Servers, Databases, Network, Analytical engines and SW Programmable components that can be rented and accessed through internet. It works on pay per usage model and return it when not required. Each of the virtual components are programmable, elastic, scalable. These Cloud Infrastructure is built on highly secured system and offers high level of redundancy. Truly it is developers paradigm to transform imagination into implementation.

### **Why Learn Cloud?**

- You must learn cloud to find a job. As every industry migrate to cloud, the job opportunity exists in Cloud in millions.
- You will find learning a lot easier. It helps you experiment. More importantly it helps you to make mistakes and learn from mistakes. It helps you learn through destructive learning. You are allowed to make repeated mistakes and destroy the machine before you find the right solution. A child learns about cars by breaking the toy car. Students must break the computer to learn about writing device drivers or networking during their lab exercise.
- Cloud infrastructure is a lot easier to access from anywhere. All you need is a laptop with internet. So you can experiment at your college and continue at home from where you left in college.
- Cloud Infrastructure is collaborative. Many people can work simultaneously on the same problem or project.
- Cloud Infrastructure is Industry deployment ready platform. So your work need not stop at theoretical study, but can be taken to prototype and to a commercial solution.

### **How do I Start?**

- Start with an idea. Get involved at least 18 months in advance before you graduate out.
- Google about cloud computing.
- Attend basic and advance course in college or at an industry or wherever you find an opportunity
- Do internship program for about 3 to 6 months.
- Participate in solving Industry problems
- Just spend 2 hours daily

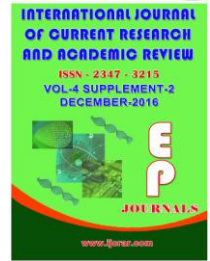




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### About Britto L Marceline:



- **Britto L Marceline** is Director, Co-founder and CEO of Synapticdots Solutions Private Limited, 34, 4th Cross Street, Chennai. [www.in2hrs.com](http://www.in2hrs.com), ph:+919884620050, Email: blm@synapticdots.com

- He has over 25 years of Research and Development expertise in Telecommunication, Software Development, Cloud Computing and Mobile Application. He is a Technocrat and Creative thinker. He brings excellence in Work and has far reaching vision to transform students to realize

their dream.

- He has a Master's Degree in Computer Technology from IIT-Delhi and Bachelor of Engineering in Computer Engineering from NEC.

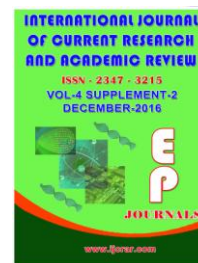
- Prior to the current job, he was CTO at CDOT-Alcatel Lucent Research center, Director India R&D at Utstarcom, Executive Director at NPI, Noida, Program Manager at CDOT.



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*Invited Lectures*

IJCRAR/PL/02

### Opinion Mining

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#### Introduction

Recently people's opinions have become an important means of making decisions, not only for individuals but also for government and commercial sectors. These opinions are made available and are widely spread due to the evolution of the mechanisms of the Internet and also due to the different applications for communication and exchange of information and opinions such as social media Networks (Twitter, Facebook, LinkedIn, etc), reviews (movie reviews, product reviews, etc), blogs, online commercial shops (Amazon, eBay, Google Shopping, etc) and more.

The enormous volume of on-line information need to be structured and organized in a useful way for the users to get oriented opinion summary. The resulting emerging fields are opinion mining and sentiment analysis. Although commonly used interchangeably to denote the same field of study, opinion mining and sentiment analysis actually focus on polarity detection and emotion recognition, respectively. Because the identification of sentiment is often exploited for detecting polarity, however, the two fields are usually combined under the same umbrella or even used as synonyms.

Opinion Mining or Sentiment Analysis is a type of natural language processing for tracking the mood of the public about a particular product. It is a computational study of affect, opinions and sentiments expressed in text blogs, editorials, reviews and newspaper articles. It involves in building a system to collect and categorize opinions about a product or service.

It can help marketers to evaluate the success of an ad campaign or new product launch, to determine which versions of a product or service are popular and identify which demographics like or dislike particular feature of a product or service.

#### Evolution of Opinion Mining

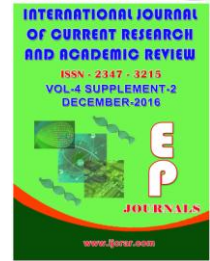
As the availability of internet is growing fast, people are getting more chances for communication and for sharing ideas and opinions. Opinions are shared in natural languages which are unstructured in nature. Opinion Mining has been evolved from the field of text mining.



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Text mining is used to derive high quality information from a given text. But for analyzing unstructured piece of opinions from a text, text mining is not sufficient. Hence the concept of opinion mining came into picture.

Opinion Mining is considered to be evolved through five different phases:

1. Text interpretation: Searching the text by providing simple queries and psychological elements as an important factor of natural language processing.
2. Low-level opinion annotation: Annotation is labeling and tagging of words when any form of text is provided. It is strictly associated with the information extraction because of the use of the classifiers and tags to annotate and label the text. The new applications of text annotations enabled the data mining technology to replace the traditional text interpretation techniques.
3. Difference between subjectivity and objectivity: In early 2000, difference between subjectivity and objectivity has been evolved which helped to provide more polarity classification. The developments of classification approaches based on this concept boost opinion mining to new applications era and put it in the core of the internet to analyze the unstructured text in several domains and context
4. Web data mining applications: Web applications in several domains including politics, health, entertainment, marketing and social networking were implemented. Web data mining, opinion mining in the web, developed web applications to help in analyzing feedbacks and user comments in various websites to evaluate products and services.
5. Lexical resources: Lexical resources such as WordNet and SentiWordNet provide parts of speech grouped in special format known as cognitive grouping. Wordnet is a lexical database where words are grouped into set of synonyms and can be accessed by human users through Web.

### **PROCESS**

Mainly there are two ways in which evaluation is done, Direct Opinion and Comparison, where different language constructs are used. Direct opinions, for example when we say "This phone has good specifications". Comparisons, for example when we say "iPhone is better than Samsung".

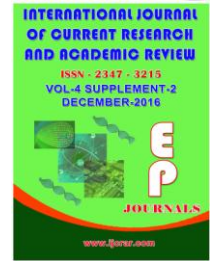
There are three components in an Opinion namely Opinion Holder, Object and Opinion. Opinion Holder is a person or organization that holds a specific opinion on a particular object. Object is an item on which an opinion is expressed. Opinion is a view, attitude, or appraisal on an object from an opinion holder.



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Opinion Mining mainly involves Sentimental Classification and Opinion Retrieval. Sentimental Classification classifies sentences/documents/features based on overall sentiments expressed by authors. Opinion Retrieval retrieves documents according to the topic and ranking them according to opinions about the topic. Opinion Retrieval is important when you need people's opinion on certain product/service or need to make a decision, based on opinions from others.

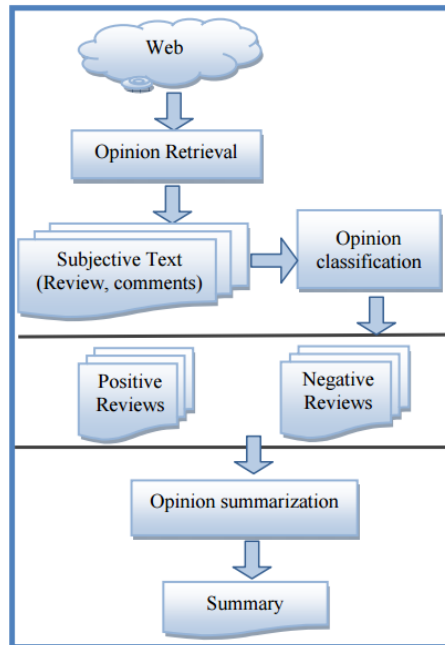


Figure1. Opinion Mining

## Sentimental Classification

Sentiment classification takes place using three main levels of classifications; each has its own assumptions and techniques.

### I. Document level classification

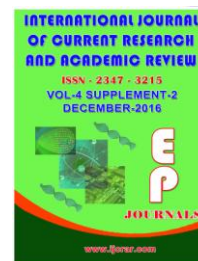
Document level considers that a document is an opinion on an entity or an aspect of it. To classify whether a whole opinion document expresses a positive or negative sentiment. For example, given a product review, the system determines whether the review expresses an overall positive or negative opinion about the product.



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### **II. Sentence level classification**

Determine whether each sentence expressed is a positive, negative, or neutral opinion. This level of analysis is closely related to subjectivity classification which distinguishes sentences into objective and subjective sentences. Objective sentences express factual information whereas subjective sentences express subjective views and opinions.

### **III. Aspect / Feature level classification**

Both the document level and the sentence level analyses do not discover what exactly people like and did not like. Aspect level performs finer-grained analysis, which was earlier called feature level (feature-based opinion mining and summarization). Instead of looking at language constructs (documents, paragraphs, sentences, clauses or phrases), aspect level directly looks at the opinion itself. It is based on the idea that an opinion consists of a sentiment (positive or negative) and a target (of opinion). It is closely related to Feature-based Opinion Mining and Opinion Summarization.

### **Opinion Retrieval**

Opinion retrieval is the task of retrieving documents according to topic and ranking them according to opinions about the topic. It is important when you need people's opinion on certain topic or need to make a decision, based on opinion from others. Opinion retrieval enables Information retrieval systems to select content based on a certain opinion about a certain topic.

Opinion retrieval is considered to be a two stage process:

1. Documents are ranked by topical relevance only.
2. Candidate relevant documents are re-ranked by their opinion scores. The opinion scores can be acquired by either machine learning based sentiment classifier, such as SVM, or a lexicon-based sentiment classifier using a sentiment lexicon and a combination of sentiment word scores and query term-sentiment word proximity scores.

The opinionated documents are further classified into positive, negative, or mixed.

### **Application Areas**

- Business and organizations are interested in opinions for
  - Survey on a topic
  - Product and service benchmarking
  - Market intelligence.
- Individuals are interested in other's opinions for
  - Purchasing a product
  - Using a service
  - Decision making tasks

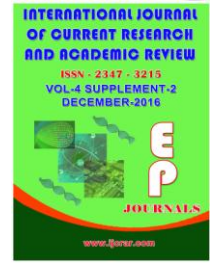




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- Placing Advertisements in user-generated content
  - An Advertisement may be placed when one praises a product
  - An Advertisement may be placed from competitor if one criticizes the product
- Opinion search also include providing general search for opinions.

### Challenges

Opinion Mining and Sentiment analysis has wide area of applications and it also facing many challenges in processing, authenticity of the extracted data and the methods used in it.

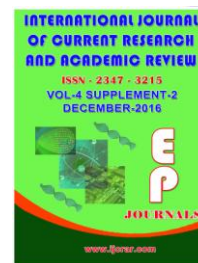
- A word that is considered to be positive in one situation may be considered negative in another situation. Example the word "long" when used for giving an opinion about a laptop.
  - Laptop's battery life was long, that would be a positive opinion.
  - Laptop's start-up time was long, that would be a negative opinion.
- People don't always express opinions the same way.
- People can be contradictory in their statements. Most reviews will have both positive and negative comments, which is somewhat manageable by analyzing sentences one at a time.
- Detection spam and fake reviewers
- Asymmetry in availability of opinion mining software, which can currently be afforded only by organizations and government, but not by citizens.
- The integration of opinion with behavior and implicit data, in order to validate and provide further analysis into the data beyond opinion that is being expressed
- The continuous need for better usability and user-friendliness of the tools, which are currently usable mainly by data analysts.



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Invited Lectures

IJCRAR/PL/03

### Issues in Social Networking

**Ms. Hema Swamy\***

Regional Director, SR Asia Chennai, India



#### Introduction

With the rise of Web2.0, a huge changeover in the use of the Internet from a platform for one way broadcasting and dissemination of information to a platform for participatory information sharing networks in the form of online social networking services and sites, is witnessed. While the adoption of social media in rural areas and developing and poor countries is still modest, the potential for its growth and therefore consequent impact cannot be underestimated.

It is well known that the use of social media carries positive and negative spinoffs. Some chief concerns are safety, privacy, risk of identity theft and corporate abuses. This paper examines the issues related to the use of social media broadly and its impacts particularly from the perspective of individual users.

#### Internet and Social Media: Growth and Penetration in the world

Most recent statistics show that some form of internet usage may be seen in 50% of the world population on an average. The highest rate of internet penetration is seen in North America with 89% of the population connected to the internet and the lowest rate may be seen in Africa at 28.7% as of June 2016. Asia records 45.6% internet penetration and is placed at second lowest place after Africa.

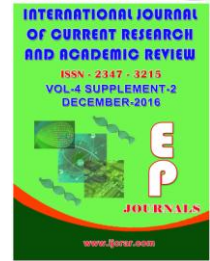
The adoption of online social network platforms such as Facebook (FB) has been phenomenal in numerical terms. As of March 2016, Facebook, Inc. reported 1.65 billion users worldwide (Source: Internet World Stats). By way of illustration, the monthly user base of FB is bigger than the population of China. Apart from Facebook, other popular online social networks are Instagram, Tumblr, Twitter, Skype, Pinterest, LinkedIn and Chat messengers like What's app, WeChat and QQ. As of September 2016, the most popular global social networks based on number of users are, after Facebook with 1.7 billion users, what's app and Facebook Messenger coming second with 1 billion users each, WeChat with 806 million users, Tumblr with 555 million, Instagram with 500 million, Twitter with 313 million, Skype with 300 million, Snapchat with 200 million, LinkedIn with 106 million and Pinterest with 100 million (Source: [www.statista.com](http://www.statista.com)). QQ and QZone are Chinese social networks and are at fourth



# International Journal of Current Research and Academic Review

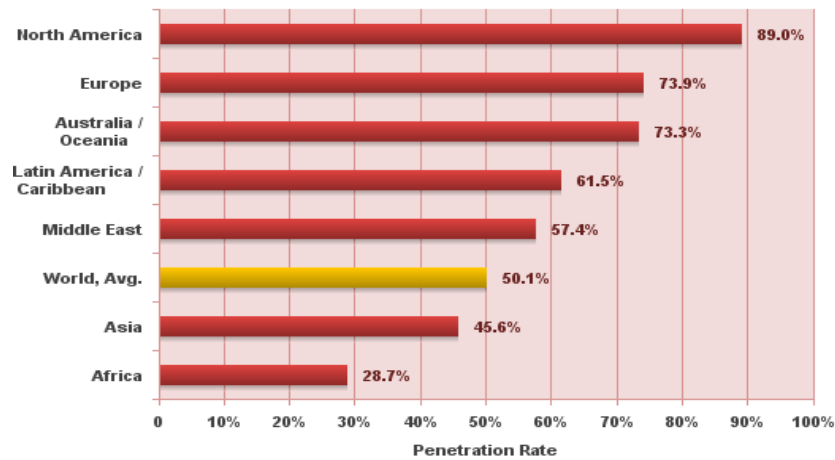
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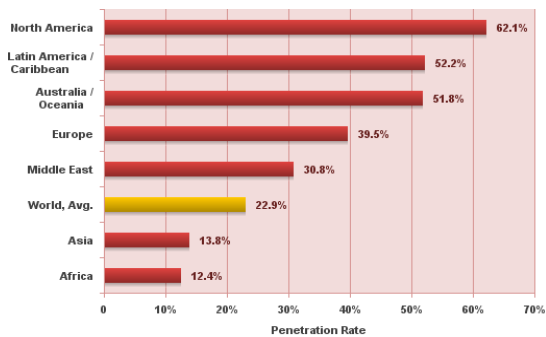
and sixth places respectively in terms of user count according to Statista and VKontakte, a European online social network is another example of the popularity of locally driven social networking websites.

## Internet World Penetration Rates by Geographic Regions - June 2016



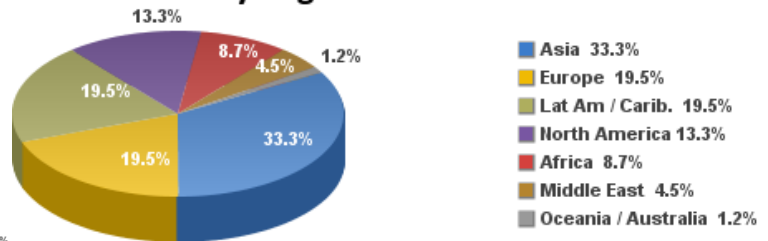
Source: Internet World Stats - [www.internetworldstats.com/stats.htm](http://www.internetworldstats.com/stats.htm)  
 Penetration Rates are based on a world population of 7,340,094,096 and 3,675,824,813 estimated Internet users on June 30, 2016.  
 Copyright © 2016, Miniwatts Marketing Group

## FACEBOOK Penetration Rates by World Geographic Regions - June 2016



Source: Internet World Stats - [www.internetworldstats.com/facebook.htm](http://www.internetworldstats.com/facebook.htm)  
 Penetration Rates are based on a world population of 7,340,093,980 and 1,679,433,530 estimated Facebook subscribers on June 30, 2016.  
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## Facebook Subscribers in the World by Regions - June 2016



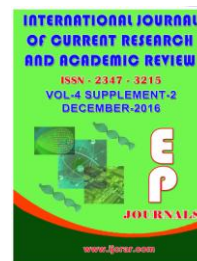
Source: Internet World Stats - [www.internetworldstats.com/facebook.htm](http://www.internetworldstats.com/facebook.htm)  
 Basis: 1,679,433,530 Internet users on June 30, 2016  
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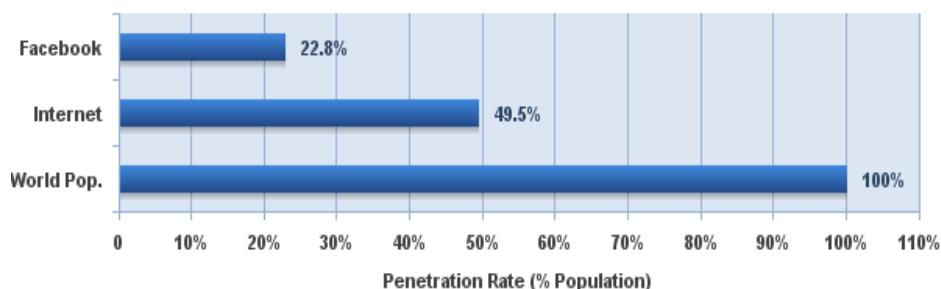
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### Facebook, Internet and World Population June 30, 2016



Source: Internet World Stats - [www.internetworldstats.com/facebook.htm](http://www.internetworldstats.com/facebook.htm)  
1,679,433,530 estimated Facebook users in the World on June 30, 2016 and 3,631,124,813 Internet users in the World on June 30, 2016 with a total estimated world population of 7,340,094,096 persons.  
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#### Positive outcomes of social media for Individuals and Organizations

Individual users of social networks may use social networking as a means:

- to learn from others and debate topics of interest
- to do research
- to influence and bond with target audiences
- to connect and share with family and friends or enlarge their networks
- to forge professional contacts
- to seek out career advice and opportunities

Organizations, for profit and non-profit, leverage social networks for commercial or business uses such as:

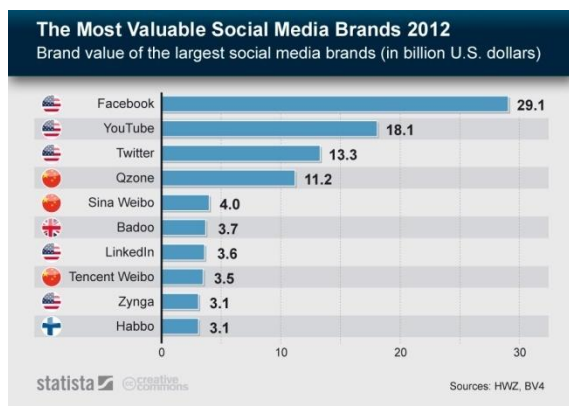
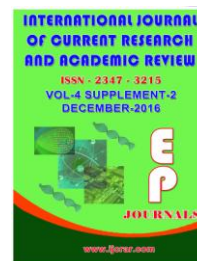
- marketing and advertising
- creating awareness and raising visibility
- influence customers to buy online, offer discounts or through peer reviews
- provide information about services and products
- to drive business profitability
- build business brand image and maintain reputation through quick responses to complaints
- to raise funds
- share information during public emergencies



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From a business perspective, the brand value of the social networks in 2012 are seen in the chart with Facebook, YouTube and Twitter as the top three brands for advertising and marketing. As of November 2016, the top five product brands with most fans on Facebook are Facebook for every phone, Coca-Cola, YouTube, Red Bull and Microsoft Windows.

### Issues in Social Networking

Concomitant with the growth of online social networks, some serious issues have also come to the fore with it. Some common dangers from social networking for the average individual user on sites like Facebook are oversharing of information, adding unknown persons, cyber bullying and psychological dependencies. Here, one must distinguish between individuals and organizations in using social networks. The following issues will apply to individual users of social networks.

#### Oversharing of personal information

When personal information such as address or phone number or private preferences are made public or without activating privacy settings, it can lead to hacking of one's account and identity theft by criminals. The social networking sites may have criminals who leverage the site for their activities. Photos can also be tampered with and misused by criminals. If location based services are activated showing one's daily hangouts or whereabouts, the online public profile will then show a user's location and if someone is there with that user. This provides an opportunity to physically track down and assault or even threats to the life of a person.

Oversharing of personal information can lead to problems if a potential employer bases their hiring decisions on social profiles and activities. Although such hiring practices may be considered unacceptable, it does take place. Before placing information on one's profile, it is best to consider if that information may adversely affect oneself or others in one's network, if it could be considered risky or if a photo is considered unsuitable in professional or other social settings. In such cases, it is best not to post very personal information. Therefore on social network websites, it is advisable to leave optional columns blank on one's profile and to keep private the personal contact details. Location based services must also be used judiciously if at all.

#### Adding strangers

Adding strangers to one's network carries the risk of hacking of one's account or someone related to that user and the unknown persons may provide fake profile information to try to gain sympathy or pretend to be a romantic interest or marriage suitor to get

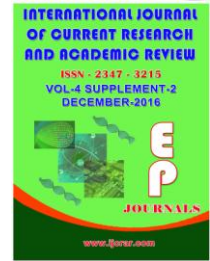




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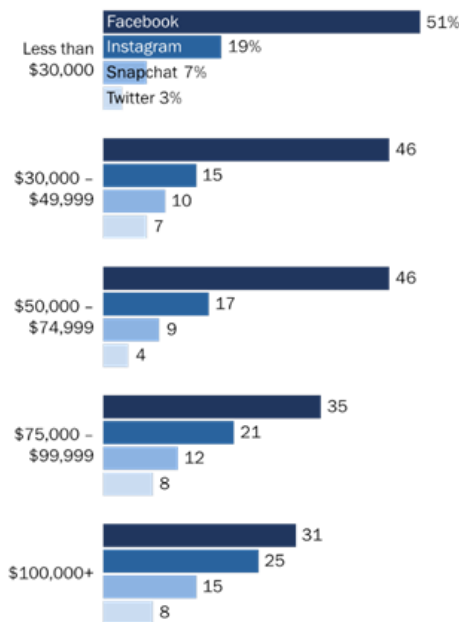


money or get access to one's banking or other sensitive information. The freedom to meet new people and the opportunity to form a personal relationship may also push people especially young adults to engage in cyber stalking or into obsessive disorders, even leading to violence on self or others.

In order to protect oneself, it is advisable not to add complete strangers. In case of work or other acquaintances in the network, one can use the privacy settings to protect one's information. The websites give information on privacy settings and how to use them. By familiarizing oneself with these settings, undesirable situations can be prevented.

### Snapchat More Likely to Be Used Most Often by Wealthier Teens; Facebook Most Popular Among Lower Income Youth

Among teens ages 13 to 17, the % of teens who use most often, by household income



Source: Pew Research Center's Teens Relationship Survey, September 25-October 9, 2014 and February 10-March 16, 2015 (n=1,016 teens ages 13 to 17).

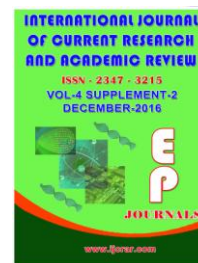
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Additionally, exposure to the activities and lifestyles of people of diverse social groups may increase aspirations of youth or it could lead to alienation at times. For example, there is an income divide between the young users of Instagram and Facebook. In the US, it is reported that rich young teens prefer Snapchat and those teens belonging to lower income group tend to use Facebook. Such social divides may be hypothesized to lead to animosity and a sense of alienation or domination. It could also lead to selective targeting by companies for business uses.

### **Cyber bullying**

Another important issue is cyber bullying which generally targets young children and teens but there are also adult victims. Cyber bullying is defined as willful and repeated harm inflicted through the use of computers, cell phones and other electronic devices according to the Cyberbullying Research Center. While usually children and teens report cyber bullying, it can also be experienced by adult victims in the form of blackmail or extortion for money or other ends. Telenor India Webwise survey of children in 13 cities in India in 2016 found that 35% of those surveyed experienced account hacking and 15.74% received inappropriate messages. Rich or prominent individuals or women may also become targets of cyber bullying.

Cyberbully Research Center recommends that one should not respond to cyber bullies as a response may encourage more of the same, must keep a record of all content as evidence, may contact law enforcement agencies in case of physical harm or danger, report to employer if the bully is a co-worker, report abuse to the website, talk to near and dear ones on ways of dealing with it, consult a lawyer if one's reputation has been tarnished, unfriend or block the bully and change your online profile or contact information if needed.

In order to prevent cyber bullying, the Center recommends restricting access to one's contact information, staying updated on the privacy settings, google oneself to see what information is posted online about oneself, avoid posting inappropriate photos or videos, practice caution even with known persons in online interactions, ensure that account information and personal devices have password protection and sessions are logged off and use site based controls to initiate contact.

### **Psychological dependencies**

Another issue that is really of concern is the excessive use of social media especially on the part of youth. In the case of children and youth or adults, this could lead to neglect of school work or lower work productivity, lack of concentration, excessive attention seeking by posting photos and other information on a daily basis, obsessive viewing of online profiles of peers, insecurity complex and comparison of popularity with peers and becoming victims of cyber bullying or aggressors.

If one's self worth is measured by the number of likes on a photo or comment, then it can potentially erode the morale and self-confidence of a person and this possibility is very real in the case of young adults. The number of friends is another measure of popularity and this again could lead to danger if one adds friends indiscriminately to seem popular. When one has a large number of friends, it is advisable to be very careful in posting information and to protect information through proper privacy settings on the given website.

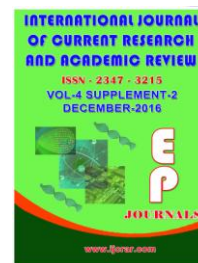
Social media may also replace face to face interactions. To counter that, it is advisable to balance one's use of social media for communication purpose and to balance it with other aspects of one's life.



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Legal and moral issues for individual users

Miller Canfield, an international law firm, lists, in an article in the company website, legal issues that could arise from social networking.

- If third party content such as photos and videos is copied and used without permission on social networking sites, it could lead to copyright infringement and attract civil and criminal liabilities.
- Ownership of one's content on profile page needs to be understood especially when one no longer wishes to store information and whether such information is permanently deleted.
- If one posts information that is defamatory to another's reputation affecting the emotional health, economic prospects or other relationships, then such posts may attract legal action in the form of defamation suits and so on.
- Postings of information can also lead to discovery of criminal activities. On-going court cases can also be influenced by information posted on social media and this also raises legal questions.

Some moral issues arise with respect to use of time. As a young adult, it could lead to wasteful usage of time and time that is spent in potentially unhealthy ways leading to habit forming behaviors. If someone at work is on social media engaging in personal recreation during working hours, it could lead to loss of productivity and also involve misuse of company resources. It also could be problematic if the worker is being paid on hourly basis or even otherwise as the worker is essentially getting paid although not working.

Other moral issues are that it may promote narcissistic and selfish tendencies, reduction in time given to real experiences or to face to face interactions and not the least, it could lead to consumerism or excessive spending due to peer pressure or unsustainable aspirations.

### **Self-regulation in using social media**

One of the disturbing possibilities of social media is that it could take the focus away from what one really needs to do in life to achieve one's goal and instead create a sense of complacency. Another issue is that the privacy settings can lead to a sense of false security. Ultimately online security may be more fragile than we may think.

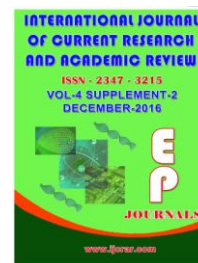
In conclusion, while social media has brought a lot of good with it, its use needs to be regulated not only legally or by the website policies but more importantly on an individual basis by the individual users themselves, so that it does not adversely impact one's life, be it in terms of safety, privacy, usage of time or mental health. Therefore this brief overview of issues in social network ends it on a cautionary note by sounding the need for self-regulation in using social media.



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Invited Lectures

IJCRAR/PL/03

### Role of Ontology in Artificial Intelligence

**Dr. A.Jaya\***

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Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner how human behaves.. AI is accomplished by studying how human brain thinks and how humans learn, decide, and work while trying to solve a problem. While developing any automated computer controlled work, the roles of ontologies are inevitable for possessing the semantic based information. AI has been dominant in various fields such as gaming, Natural Language processing, expert systems, vision system, speech recognition, hand writing recognition, intelligent tools etc.

Ontology plays vital role in applications of AI for possessing and preserving the data and it forms the heart of any system and represents knowledge for that domain. Ontology is a formal explicit description of concepts in a domain of concepts, properties of each concept describing various features and attributes of the concept, and restrictions on slots. Ontology together with a set of individual instances of classes constitutes a knowledge base. The reasons for using ontology:

- To share common understanding of the structure of information among people or software agents
- To enable reuse of domain knowledge
- To make domain assumptions explicit
- To separate domain knowledge from the operational knowledge
- To analyze domain knowledge

#### Ontology in NLP

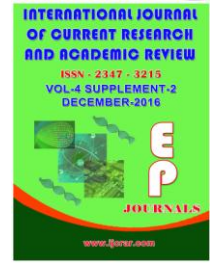
There are lots of AI applications related to NLP such as intelligent Question and answering system, intelligent search engine, requirement elicitation for software design etc. For any sort of applications, the ontology poses the domain based information. The derived information from ontology is utilized for intelligent reasoning of any system.



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### Ontology in E-learning

E-learning is learning, utilizing electronic technologies to access educational curriculum outside of a traditional classroom. Ontology's can be employed to query and to navigate through the learning material supporting the learning process. The relevant concepts which are attested in the learning objects constitute the backbone of the ontology. Thus, a relation is created between the learning material and its conceptualization which is represented by means of the ontology allowing for the creation of individualized learning paths. Ontology's allow for the possibility to develop a more dynamic learning environment with better access to specific learning object.

### Ontology and semantic web

Semantic web is an effort to enhance current web so that computers can process the information presented on WWW, interpret and connect it, to help humans to find required knowledge. It provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries. The web ontology aims to bring the expressive and reasoning power of description logic to the semantic web.

It also plays major role in social media analysis to provide the opinions over the discussions, feedback and review among the group. Ontologies and web glue together that helps to bring the web to its full potential.

Ontology plays a major and vital role in all the AI applications and yields the fruitful outcomes.

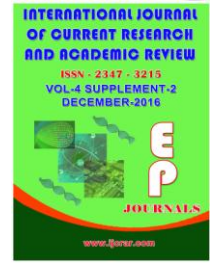




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Invited Abstracts

IJCRAR/OP/01

### An analysis of the computer techniques in educational technology to enhance the learning skills

**Ananthi Sheshasaayee<sup>1\*</sup> and N. Menaka<sup>2</sup>**

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#### Abstract

Depending on the learning behavior of the student, the content in any field may be difficult and demanding. Now a days, concentration is essential for studybutmany students can find hard to concentrate on their study. This can be reduced by the use of word cloud technique.In order to find the deeper meaning in a text passage, a word cloud is a simple application that will helps the student to improve their learning skills. A word cloud is a simple visual emphasis on the most-used terms that will give the students a quick preview on their content .Word clouds is an interactive tool to engage the students to listen and understand a concept more easily by themselves .This paper discuss the techniques and the various efficiency methods to enhance the learning skill of the student.

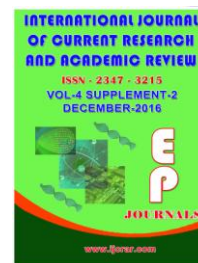
**KEYWORDS:** *Deeper meaning, Interactivetool, Learning behavior,Word cloud*



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Invited Abstracts

IJCRAR/OP/02

### A Comparative Study about Filtering Techniques in Removal of Noisy Pixels in Digital Images

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#### Abstract

A very vast portion of digital image processing is concerned with different filtering technique. This includes research in algorithm and routine goal oriented image processing. Image restoration is the removal or reduction of noise in degraded images that are incurred while the image is being obtained. Degradation comes from blurring as well as noise due to various sources. Blurring is a form of bandwidth reduction in the image caused by the imperfect image formation process like relative motion between the camera & the object or by an optical system which is out of the focus. When aerial photographs are taken for remote sensing purposes, atmospheric turbulence introduces blurs, optical system aberration and relative motion between camera and the ground. In this paper we analyze different filtering techniques applications in image processing.

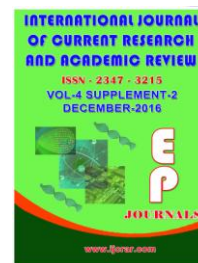
**KEYWORDS:** Digital Image, Filter, Restoration, Noises and Blur.



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Invited Abstracts

IJCRAR/OP/03

### Big Data - An Survey

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#### Abstract

Big data is the term for any collection of datasets so large and complex that it becomes difficult to process traditional data processing applications. The challenges include analysis, capture, curation, search, sharing, storage, transfer, visualization, and privacy violations. Big data is a set of techniques and technologies that require new forms of integration to uncover large hidden values from large datasets that are diverse, complex, and of massive scale. Big data environment is used to acquire, organize and analyze the various types of data. Data that is so large in volume, so diverse in variety or moving with such velocity is called Big data. Analyzing Big Data is a challenging task as it involves large distributed file systems which should be fault tolerant, flexible and scalable. The technologies used by big data application to handle the massive data are Hadoop, Map Reduce, Apache Hive and No SQL. First, we present the definition of big data and discuss big data challenges. Next, we present a systematic framework to decompose big data systems into four sequential modules, namely data generation, data acquisition, data storage, and data analytics. These four modules form a big data value chain. Following that, we present a detailed survey of Materials and methods used in research and industry communities. In addition, we present the prevalent Hadoop framework for addressing big data. Finally, we outline Big data system architecture and present key challenges of research directions for big data system. Big data is a largest buzz phrases in domain of IT, new technologies of personal communication driving the big data new trend and internet population grew day by day but it never reach by 100%. Google contains the large amount of information. So; there is the need of Big Data Analytics that is the processing of the complex and massive datasets. This data is different from structured data in terms of five parameters – variety, volume, value, veracity and velocity (5V's). The five V's (volume, variety, velocity, value, veracity) are the challenges of big data management are: 1. Volume: Data is ever-growing day by day of all types ever MB, PB, YB, ZB, KB, TB of information. The data results into large files. Excessive volume of data is main issue of storage. This main issue is resolved by reducing storage cost. Data volumes are expected to grow 50 times by 2020. 2. Variety: Data sources are extremely heterogeneous. The files come in various formats and of any type, it may be structured or unstructured such as text, audio, videos, log files and more. The varieties are endless, and the data enters the network without having been quantified or qualified in any way. 3. Velocity: The data comes at high speed. Sometimes 1 minute is too late so big data is time sensitive. Some organizations data velocity is main challenge. The social media messages and credit card transactions done in millisecond and data generated by this putting in to databases. 4. Value: It is a most important v in big data. Value is main buzz for big data because it is important for businesses, IT infrastructure system to store large amount of values in database. 5. Veracity: The increase in the range of value is typical of a large data set. When we dealing with high volume, velocity and variety of data, the all of data are not going 100% correct, there will be dirty data. Big data and analytic technologies work with these types of data. Huge volume of data (both structured and unstructured) is management by organization, administration and governance. Unstructured data is a data that is not present in a database. Unstructured data may be text, verbal data or in another form. Textual unstructured data is like power point presentation, email messages, word documents, and instant messages. Data in another format can be .jpg images, .png images and audio files.

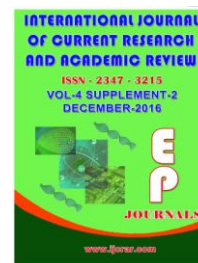
**KEYWORDS:** Big Data, Hadoop, Map Reduce, Apache Hive and No SQL.



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Invited Abstracts

IJCRAR/OP/04

### Extracting Features from an Image using Mathematical Morphology Image processing Tools

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#### Abstract

The field of digital image processing requires more practical and experimental task involving large sets of sample images. A basic strategy behind any image processing is extracting the region of interest from the given original image. The morphological image processing tools are the state-of-the art software tools by which the features of any image can be extracted. This paper deals with the integration of two important morphological tools dilation and erosion for feature extraction of any image. Dilation is the morphological tool that helps to grows or thickens the objects in an image. Erosion is the tool which is used to shrinks or thins the objects in an image. Structuring element is used to control the thickening and thinning of an image. Graphically, structuring elements can be represented either by a matrix of 0s and 1s or as a set of foreground (1-valued) pixels. A dilation of X by Y is denoted as  $X \oplus Y = \{z | (\tilde{Y})_z \cap X \neq \emptyset\}$ . The dilation of X by Y is the set consisting of all the structuring elements origin locations where the reflected and translated Y overlaps at least one element of X. It is a convention in image processing to let the first operand of  $X \oplus Y$  be the image and the second operand will be the structuring element, which is normally smaller than the image. The erosion of X by Y denoted as  $\{z | (\tilde{Y})_z \cap X' = \emptyset\}$  will thin an image. On integrating dilation and erosion, opening and closing of an image is implemented that can perform morphological task of extracting objects of an image. The morphological opening of an image is the erosion followed by the dilation using the same structural element. It is used to remove all smaller objects in an image and preserves size and shape of the larger objects of an image.

#### Algorithm:

- Step 1: Read the input image
- Step 2: Create a structuring element based on input image.
- Step 3: Erode the image with a structuring element.
- Step 4: Dilate the eroded image with the structuring element.

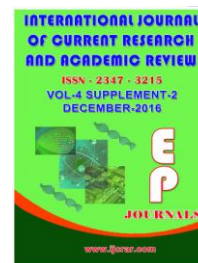
**KEYWORDS:** Dilation, Erosion, Structuring element, morphological operations, Feature extraction.



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Invited Abstracts

IJCRAR/OP/05

### Data Mining in Business Persepective – An Overview

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#### Abstract

Data mining is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends patterns and behaviors, allowing businesses to make proactive, knowledge-driven decisions. For several years, proponents have touted data mining as an effective and efficient tool for finding patterns hidden in large database. They promise many benefits, such as increased revenues for companies that use the technology to fine-tune their marketing by digging out customers' buying patterns from mountains of sales data. Until recently, however, data mining has been a complex, expensive, somewhat limited tool adopted primarily by large companies. This pattern may be changing, though, because of new techniques and technologies. Insurance companies and stock exchanges, for instance, are now using data mining to detect customer-activity patterns that indicate fraudulent behavior. Doctors are using data mining to predict the effectiveness of surgical procedures, tests, or medications for various types of conditions. The market for data mining will be billions of dollars by the turn of the century. Unfortunately, much of what is now considered data mining will be irrelevant, since it is disconnected from the business world. In general, marketing analysts' predictions that the technology of data mining will be very relevant to businesses in the future are correct. The key to making a successful data mining software product is to embrace the business problems that the technology is meant to solve, not to incorporate the hottest technology. This paper explores the possibilities of using data mining technology in business and other relevant areas.

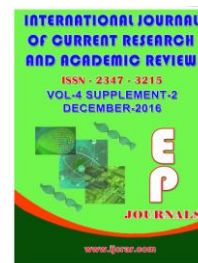
**KEYWORDS:** *Data Mining, Data warehousing, Data Mining Tools.*



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Invited Abstracts

IJCRAR/OP/06

### An Application of Intelligent Evaluation System using Knowledge Base for the selection of Staff

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#### Abstract

Selecting right person for right talent becomes a tedious process in the current scenario as there are more no of candidates with more knowledge and talent who can work in different domain and cope to the management in all aspects, so the main responsibility in any organization be it a college, company or an industry, it is the vital role of Human Resource Personnel to propose the pool of right talent to the interviewers to save time and to select the right talented person for the organization. IES proposes four different phases, Phase1: Document clustering or Similarity process- Document similarity is the process of correlating two or more documents to each other or measuring similarity among text documents. Automatic document correlation is quite a difficult task especially if the evaluation criterion does not take into consideration the semantics of the text. Therefore, the process of measuring document similarity can be classified into semantic-based and non-semantic-based. Phase 2: Keyword Information Extraction from the Clustered documents for the process of weights assignment. Phase 3: Filtering the extracted information into a database thus creates the knowledge base and weights are assigned to the extracted information. phase 4: Query the database for creating the talent pool and sending the interview letters.

**KEYWORDS:** Intelligent Evaluation System, Clustered documents

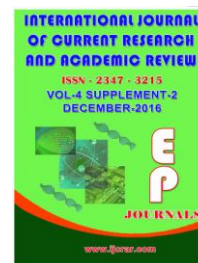




## International Journal of Current Research and Academic Review

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Invited Abstracts

IJCRAR/OP/07

### Binarization of Fingerprint Using Watershed Algorithm

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#### Abstract

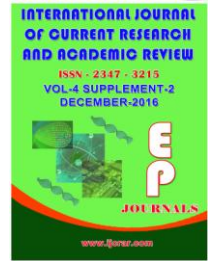
Image Segmentation is a fundamental step in analysing and understanding images. It is a process of partitioning the image into multiple segments. It is the first important step in many image processing applications like image analysis, image description and recognition, image visualization and object based image compression. Image segmentation means assigning a label to each pixel in the image such that pixels with same labels share common visual characteristics. For more than a century, fingerprints were considered to be the identifying mark for the human beings. Fingerprint is a protected human organ and an effective biometric approach to human or personal identification. It acts like a living password for humans as its texture is stable throughout the human life. Fingerprints are an impression left by the friction ridges of human finger. For several reasons, we need to store these fingerprints in a database and among them one of the main reasons is they are used for analysis of forensic evidence worldwide. The recovery of fingerprints from a crime scene is an important method of forensic science. Fingerprints are easily deposited on suitable surfaces, such as glass, metal or polished stone, by the natural secretions of sweat from the eccrine glands that are present in epidermal ridges. These are sometimes referred to as "Chanced Impressions". Fingerprints are a unique feature for identification and verification of humans. The need to optimise several databases for storing the images of fingerprints is a major concerning issue. Several segmentation algorithms have been used in the time past but there are still several challenges being faced like computational efficiency. Another challenge is that segmentation procedure can be impractically slow, or requires extremely large amounts of memory. This paper addresses the challenges by employing watershed flooding algorithm on the fingerprint images so as to optimize the sizes of the databases. Image segmentation is an important problem in different fields of image processing and computer vision. Image segmentation is the process of dividing images according to its characteristic e.g., color and objects present in the images. Different methods are presented for image segmentation. The focus of this study is the watershed segmentation. Watershed algorithm can generate segmentation on badly contrast images. Watershed transformation can be applied to human fingerprints segmentation by taking the idea from friction ridges of human finger and also with an effective storage capacity for the segmented images. Watershed algorithm depends on ridges to perform a proper segmentation, a property that is often fulfilled in contour detection where the boundaries of the objects are expressed as ridges. When simulating the watershed transform for image segmentation, two approaches may be used: either one first finds basins, then watersheds by taking a set complement; or one computes a complete partition of the image into basins, and subsequently finds the watersheds by boundary detection. The basic idea behind watershed algorithm by



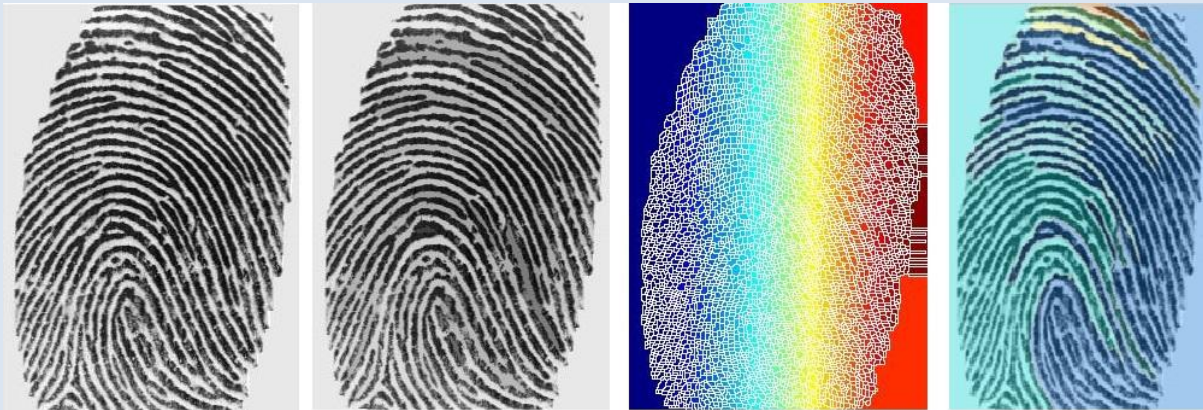
## International Journal of Current Research and Academic Review

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immersion comes from Geography. The image can be thought of as a surface; the bright areas are “high” surfaces and dark areas are “low” surfaces. The watershed transformation considers the gradient magnitude of an image as a topographic surface. Pixels having the highest gradient magnitude intensities (GMIs) correspond to watershed lines, which represent the region boundaries. Water placed on any pixel enclosed by a common watershed line flows downhill to a common local intensity minimum (LIM). Pixels draining to a common minimum form a catch basin, which represents a segment. The following results have been obtained by applying the watershed algorithm on fingerprints. The simulation results helped in significantly segmenting the fingerprint image for future analysis.



**Fig: Stepwise Implementation of Watershed Algorithm**

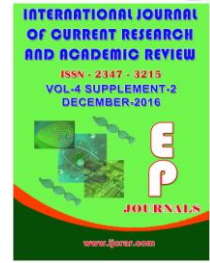
**KEYWORDS:** *Image processing, Segmentation, Watershed.*



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Invited Abstracts

IJCRAR/OP/o8

### Enhancing the Rail Fence Cipher to Improve the Security on Data

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#### Abstract

The rail fence cipher is a very easy to crack cipher. It is a transposition cipher that follows a simple rule for mixing up the characters in the plaintext to form the cipher text. The rail fence cipher is essentially no communication security, and it will be shown that it can be easily broken even by hand. It can be combined with other ciphers, such as a substitution cipher, the combination of which is more difficult to break than either cipher on its own. In many sites the rail fence is “write the columns and read along the rows” cipher which is equivalent to using an un-keyed columnar transposition. A transposition cipher involves the rearranging of the letters in the plaintext to encrypt the message. This is in contrast to a substitution cipher, in which the plaintext letters are replaced by letters from another alphabet (or by different letters from the same alphabet). Rail Fence cipher is a transposition cipher consisting in writing a text in zigzag and read it from left to right. Here proposed system extracting the text by using the coded technique of the character to obtain the exact text. The rail fence cipher, the plaintext is written downwards, then moving up when we reach the bottom rail. When we reach the top rail, the message is written downwards again until the whole plaintext is written out. To decipher a message we must know the number of rails that were used to encipher it then break up the letters into equal groups for each rail.

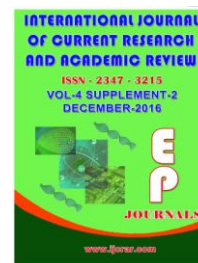
#### KEYWORDS:



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Invited Abstracts

IJCRAR/OP/09

### Robust Data Hiding in Video using Forbidden Zone and Selective Embedding

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#### Abstract

In the recent years, there are lots of systems are introduced to protect product data. The people have invented a large thing to protect the data and there are lots of hiding techniques to be invented for security purposes. Data hiding is the process of embedding information into a host medium. In general, visual and audio media are preferred due to their wide presence and the tolerance of human perceptual systems involved. Although the general structure of the data hiding process does not depend on the host media type, the methods vary depending on the nature of such media. For instance, image and video data hiding share many common points; however, video data hiding necessitates more complex designs, as a result of the additional temporal dimension. Therefore, video data hiding continues to constitute an active research area. Data hiding in video sequences is performed in two major ways: bitstream-level and data-level. In bitstream-level, the redundancies within the current compression standards are exploited. Typically, encoders have various options during encoding and this freedom of selection is suitable for manipulation with the aim of data hiding. However, these methods highly rely on the structure of the bitstream; hence, they are quite fragile, in the sense that in many cases they cannot survive any format conversion or transcoding, even without any significant loss of perceptual quality. As a result, this type of data hiding method is generally proposed for fragile applications, such as authentication. On the other hand, data-level methods are more robust to attacks. Therefore, they are suitable for a broader range of applications. Despite their fragility, the bitstream-based methods are still attractive for data hiding applications. FZDH is a practical data hiding method, which is shown to be superior to the conventional Quantization Index Modulation (QIM). RA codes are already used in image and video data hiding due to their robustness against erasures. This robustness allows handling desynchronization between encoder and decoder that occurs as a result of the differences in the selected coefficients. In order to incorporate frame synchronization markers, we partition the blocks into two groups. One group is used for frame marker embedding and the other is used for message bits. By means of simple rules applied to the frame markers, we introduce a certain level of robustness against frame drop, repeat and insert attacks. We utilize systematic RA codes to encode message bits and frame marker bits. Each bit is associated with a block residing in a group of frames. Random interleaving is performed spatio-temporally; hence, dependency to local characteristics is reduced. Host signal coefficients used for data hiding are selected at four stages. First, frame selection is performed. Frames with sufficient number of blocks are selected. Next, only some predetermined low frequency DCT coefficients are permitted to hide data. Then the average energy of the block is expected to be greater than a predetermined threshold. In the final stage, the energy of each coefficient is compared against another threshold. The unselected blocks are labeled as erasures and they are not processed. For each selected block, there exists a variable number of coefficients. These coefficients are used to embed and decode single message bits by employing a multi-dimensional form of FZDH that uses a cubic lattice as its base quantizer.

#### KEYWORDS:

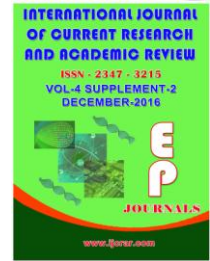




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Invited Abstracts

IJCRAR/OP/10

### Energy Efficient RAID Cloud Storage System on Green Data Center

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#### Abstract

Cloud Computing has become an unbeatable technology improvement takes place nowadays. Today, IT industry brings subsequent new applications makes tremendous changes through Information and Communication Technology (ICT) and it reaches to the customers even in a single-click execution strategy. Cloud computing encapsulate efficient utilization of resources in order to applying different methodology, techniques, and promoting new algorithms in every research article. Further, heavy usage in cloud datacenters has becomes an unbalanced load to reduce execution speed and consume more energy. Efficient utilization of cloud storage system plays a significant role in cloud data center. In this paper, we proposed an energy efficient RAID (Redundancy Array Independent Disk) cloud storage system on green data center to avoid fault tolerance and reduce energy absorption.

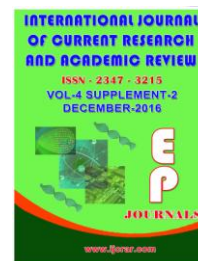
**KEYWORDS:** *Cloud Computing, Resource Utilization, Storage System, RAID, Energy consumption.*



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Invited Abstracts

IJCRAR/OP/11

### Recommendation System for Information Overloaded Social Networks Using Collaborative Filtering Technique

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#### Abstract

Recently the social networks have become tremendously popular, due to the explosive growth of participatory media content such as blogs, videos, and podcasts online. Prominent examples include text, image, and video sharing sites like Flickr and YouTube, social tagging sites such as Delicious, and micro-blogging sites such as Facebook, LinkedIn, and Twitter. Millions of users become active daily on social network sites that facilitate creating and sharing information with others online. For online users, a wide variety of applications like buying products, Customer Review Sites, and wikis are appearing on the Internet. The popularity of social networking sites among the users' results in huge volumes of information online and hence poses a significant challenge in terms of information overload. Information overloaded with blogs, tags, item reviews, knowledge-sharing sites, online gaming, and user ratings frequently overwhelm online users leaving them with poor decisions. Recommenders have been employed to provide ratings on subject domains such as books, music, sports, movies, news and web pages. The recommender system involves millions of users and items, but only commonly purchased items are rated by users. A recommender system is an efficient software tool that suggests users to buy the desirable items without being overwhelmed by unrelated information. The Recommendation system identifies the user's neighbors similar to the target user's profile information and suggests the user target products that the neighbors mostly liked in the past. The user profiling represents the process of acquiring and extracting the users' interest from their profile information. The major drawback is data sparseness that defines the inability to recommend the users due to insufficient overlap among the target user and neighbors, and a lack of direction to the user towards items that he likes, but unaware of it. New users can start with a blank profile without selecting or rating any items leading to data sparseness. Moreover, generating personalized recommendations is not an easy task in the context of the enormous volume of information shared through social networks. Recently the recommender systems exploit data with limited relevance to generating user profiles, and it is too simple to produce quality recommendations. However, it is a challenging task in existing systems. The main focus of this research work is to make the system more robust to the data sparseness in which only a few friends have few common ratings facilitating quality recommendations using collaborative filtering and content based recommendation techniques.

**KEYWORDS:** Recommender systems, collaborative filtering, social network.

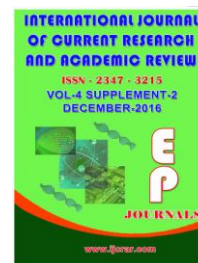




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Invited Abstracts

IJCRAR/OP/12

### Enhanced Round Robin Algorithm for improving CPU Efficiency

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#### Abstract

The Enhanced Round Robin (RR) CPU scheduling algorithm is a fair-haired scheduling algorithm that gives equal time slice to all tasks. The selection of the time slice is significant as it affects the algorithm's performance. The intention of this paper is to evaluate different versions of Round Robin algorithm on the basis of time slice, average waiting time and number of context switches. A CPU can execute number of context switches per second. Therefore, the user knows the idea that the computer is performing multiple tasks in a fast manner by using parallel mode, when the CPU in fact alternates within the processes at a high rate of speed. We can reduce the amount of context switching by reducing the total number of active threads. Any processing within the physical machines takes time. And the number of usable registers is defined by the instruction set and the ABI conventions. Based on the instruction set we can choose only desired registers. So that the CPU's overhead has to be minimized by avoiding usage of external memory during context-switching thus performance will be improved. This can be further enhanced by avoiding the need of modifying the hardware, instead, reducing the clock cycle consumption for to and fro transfer of contents from memory to processor. The proposed paper devises a new algorithm which is more suitable for the certain process and improves the efficiency of the CPU. Based on the performance analysis, a new idea has been proposed to reduce number of context switches. Also, this algorithm provides better scheduling criterion by retaining the benefits of existing one and reduces starvation problem.

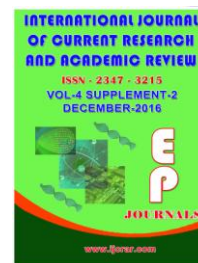
**KEYWORDS:** CPU scheduling, Turnaround time, Waiting time, Context switching, Gantt chart.



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Invited Abstracts

IJCRAR/OP/13

### Fitting a Poisson Regression Model for the Effects of Air Pollution on Cardiovascular Disease

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#### Abstract

There are many diseases that may be caused by air pollution. Thus the air pollution has an adverse effects upon the health of human beings as well as ecology. It has been found that people living in air polluted areas are suffering from certain respiratory diseases and cardiovascular disease than people living in fresh air. In recent years, more evidence has shown that particulate matter ( $PM_{10}$ ,  $PM_{2.5}$ ), sulphur dioxide ( $SO_2$ ), oxide of nitrogen ( $NO_x$ ) and other major air pollutants have acute adverse effects on the human circulatory system. Hospital admissions records for cardiovascular disease and air pollutants data collected from January 2012 to December 2015. The relative risk of hospital admission for cardiovascular disease was estimated using a Poisson regression analysis in R software. In this paper, we noticed that whether there is an association between air pollutants levels and number of hospital admissions for cardiovascular diseases. Also, we observed that different types of cardiovascular diseases due to pollutants,  $PM_{10}$  and  $NO_x$ .

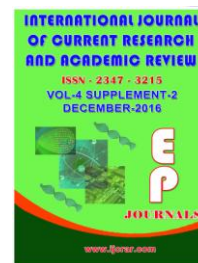
**KEYWORDS:** *air pollutants, cardiovascular disease, blood pressure, Poisson regression.*



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Invited Abstracts

IJCRAR/OP/14

### Optimization and Logical Errors in SQL Query - Deriving a Solution

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#### Abstract

Universally, it is a query language used for accessing and modifying information in a database. Some common SQL commands include "insert," "update," and "delete." The language was first created by IBM in 1975 and was called SEQUEL for "Structured English Query Language." Since then, it has undergone a number of changes, many coming from Oracle products. Query optimization has been in vogue since the early '70s and extensive work has been done on it..it is not an easy task to assess the breadth and depth of this study of work in a short paper. Thus it becomes necessary to focus primarily on the optimization of SQL queries in relational database systems and give my view as a small contribution in this field. The goal of this article is not to be too deep, but to explain the foundations and present studies of significant work in this area. Maintaining the consistency and persistence of different query conditions is an ancient debate, and there are already many proposed solutions. Since the problem does not arrive at the most optimal solution, we cannot decide on the best method. However, for various comparisons, it seems that the method of Guo, Sun, and Weiss (1996) is the state of the art. In this paper, i would like to state how we can flexibly use the above method to handle many cases of sub queries (and also null values). As a result of this, the consistency of a large subset of SQL can be decided. We apply this check in finding semantic errors in SQL queries. In particular, i can find possible runtime errors in SQL queries and show that a test for such errors can be reduced to a mere consistency monitoring. Future database management systems can be trusted to perform such checks and the resultant warnings will help to develop code with fewer errors which can be solved in a short time.

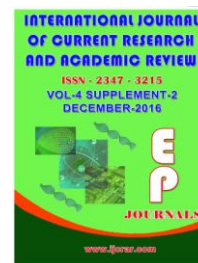
**KEYWORDS:** *old problem, query condition, logical error, semantic error, consistency check, sql query, future database management system, many case, null value, large subset, generated warning, possible runtime error. .*



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Invited Abstracts

IJCRAR/OP/15

### Cloud Computing-Paving the Way for E-Learning

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#### Abstract

Developments in computing influence different phases of education. The purpose of this paper is to test and calculate the potential value of e-learning using the platform of cloud computing. It is also to discuss the uniqueness and variation of cloud computing from other forms of computing. This paper also looks into the potential advantages and disadvantages of using cloud computing as a platform for e-learning. We assess the requirements and challenges of implementing cloud computing along with the ways to overcome them. Benefits of cloud computing platform for e learning can include reduced costs, ease of maintenance and updating and also benefits of security and compatibility to end users. However, cloud-based learning systems require fast and reliable Internet access, and issues surrounding the security of a cloud remain unclear.

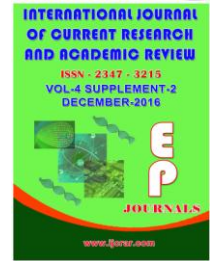
**KEYWORDS:** *Cloud computing, E-learning, Challenges in learning Infrastructure, Software services.*



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Invited Abstracts

IJCRAR/OP/16

### Criminals Identification by Constructing Image Clippings on Big Data

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#### Abstract

This paper presents a system to built the image of the criminal by retrieving the clippings already stored in the database .The database will contains the clips of various features of the criminal face , the clips of criminal features are identified with their criminal ID linked to every feature of the criminal . Based on the information given by the eyewitnesses every clip are added then checks any clip match with any particular criminal clippings in the database by clips matching process(CMP).if is matched then crime is done by old criminal and retrieve his/her records for further action else the crime is done by new criminal and the new formed clippings of new criminal are added to the database.

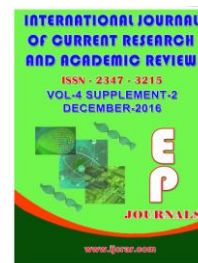
#### KEYWORDS:



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Invited Abstracts

IJCRAR/OP/17

### Anatomization of Ridgeological & Cretoscopic Cognizance of a Maternal Bond

**J. Grace Hannah<sup>1</sup> and D. Gladis<sup>2</sup>**

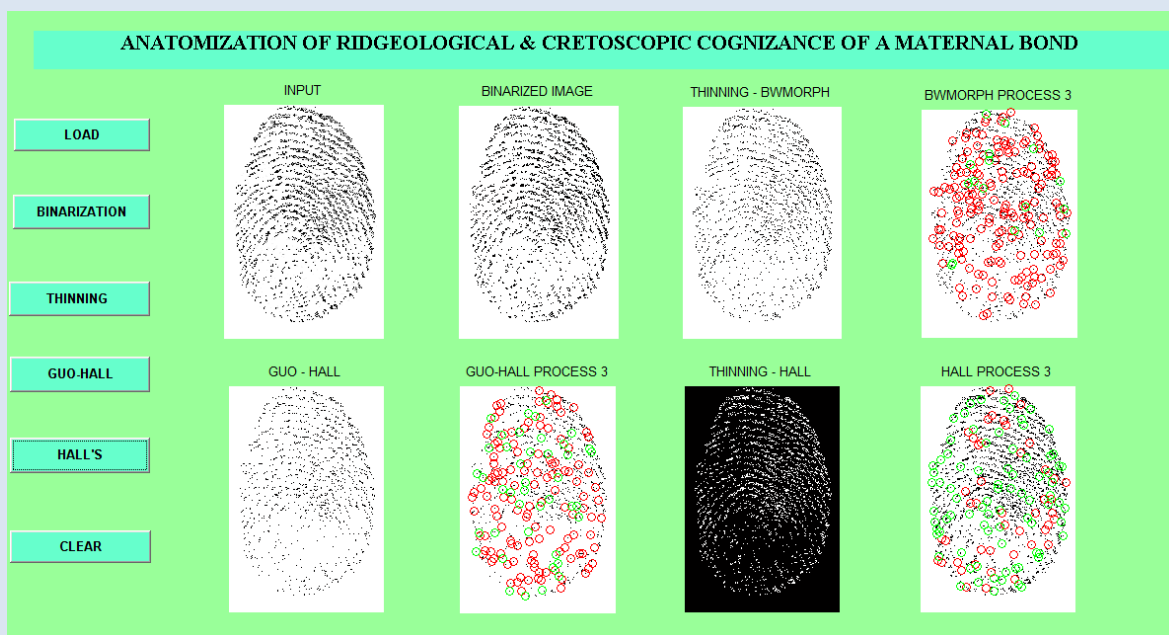
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#### Abstract

Biometrics, a riveting pattern recognition area of research is the application of statistical analysis to biological data. The untarnished feature of Biometrics has made it an impeccable part of every security system. There are umpteen numbers of biometric modalities like the eye, face, gait, voice, but the aberrant modality is the fingerprints. The unswerving nature of the fingerprint has made it bankable. Fingerprints are popular and used globally in the forensic departments for criminal investigation to attendance systems and other security systems for various applications. The manual systems are now replaced with automated systems and have made fingerprints indispensable. A fingerprint of an individual can contribute to two aspects: individuality and identification. The exceptional facet of a fingerprint is the unique motifs which are composed of distinctive features called the minutiae. Enhancing and thinning of a fingerprint plays a vital role in identification, and the minutiae points prove to be intriguing and a pivotal factor for distinct recognition of fingerprints. This feature of fingerprints helps to differentiate even identical twins and is thus considered to be flawless and impressive with a colossal number of applications. The prints in a finger are formed as early as 18 weeks when the fetus is in the womb of the mother. Initially a thin waxy, transparent layer is formed in the fingers of the baby, which develops into a middle layer called as the basal layer. The buckling and folding of this basal layer is partially responsible for the fingerprint pads that become visible as development ensures. The pattern of ridges formed in the finger of the baby remains sempiternal throughout his/her lifetime. Ridges form the black lines and the valleys constitute the white portion seen in between the ridges. Minutiae are the ancillary components of a fingerprint. Minutiae are divided into terminations (or otherwise called as ridge ending) and bifurcations (ridge Split or branching). Apart from these classifications, ridges are further divided into spur, spike, crossover and bridge, but the main focus of this paper is on the terminations and bifurcations. Identification of fingerprint is done in two ways: by analyzing and computing based on the ridge patterns, and by minutiae extraction. In order to obtain precision in extraction of minutiae, a fingerprint has to be preprocessed in a meticulous manner. The recent challenge in hospitals and in various places involves the identification of missing/lost or interchanged children, thus enabling this application to play a significant role in aiding parents. The proposed work deals with the fusion of fingerprints of a mother and a child. Since the prints formed in the finger of a child are obfuscating, certain enhancements has to be done for accurate processing. The following figure gives the result obtained by processing the fingerprints.





**Fig.1. Stepwise Implementation of the fused image of the Mother and child & the thinning algorithms with the extraction of minutiae**

The thinning algorithms such as the Guo-Hall's, Hall's and morphological thinning have been implemented to aggrandize the quality of the ridges. Once the thinned image is obtained, the extraction of minutiae is done by using the Summing-Up algorithm. The unsheathed minutiae points expound the precision rate of fingerprints. The simulation results elucidate that the process of thinning is incumbent for unerring minutiae extraction from the fingerprints.

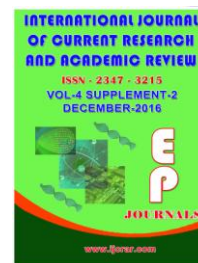
**KEYWORDS:** *Biometric modalities, Fingerprint, Guo-Hall's, Hall's, Minutiae extraction, Thinning.*



## International Journal of Current Research and Academic Review

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Invited Abstracts

IJCRAR/OP/18

### Comparative Study of Unsupervised Similarity Measures using E-Learning Web Documents

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#### Abstract

This paper reviews some of the methods of unsupervised similarity measures using web documents used for automatic extraction of similar documents from different kinds of sources, large collection of documents, the World Wide Web. Unsupervised similarity measures which do not use any background knowledge or no human intervention during the similarity measure process. This paper explains about the different kinds of metrics used for similarity measure, and the effect of similarity metrics such as page count based metrics, text based similarity metrics, corpus based similarity metrics, context based similarity metrics are investigated. Further this paper also verifies whether the ranking of search engine is affected by the unsupervised similarity performance using e-Learning documents. E-learning refers to the application of information and communication technology which helps in enhancement of classroom teaching and learning. Educational intuitions have adopted e-learning as a supplement of traditional education methods. Web information extraction task becomes one of the vital task in e-learning, extracting a precise and exact text fragments from documents should be done automatically. It is an intelligent processing technique which involves the usage of wrappers around the unstructured data, a wrapper can generally learn the text based patterns. Wrapper learning systems can definitely reduce the amount of human effort in constructing wrappers. previously developed wrappers cannot extract information from unseen websites. A wrapper adaption system is required to develop to automatically extract information from unseen websites. Earlier wrappers can extract data only from the predefined set of attributes but to extract data from the new set of unseen attributes, a new system need to be proposed.

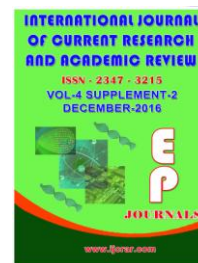
**KEYWORDS:** *Text based similarity metrics, Corpus based similarity metrics, Wrapper learning, E-learning.*



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Invited Abstracts

IJCRAR/OP/19

### Retinal Blood Vessels Extracion Using Thinning Algorithm for Children

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#### Abstract

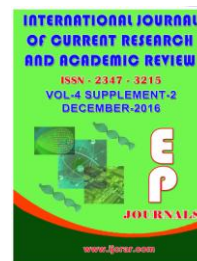
Proper eye care is an extremely important part of child's development. It is important that children receive attention regarding their eyesight from a very early age to be sure that everything is developing correctly. Routine eye test are offered to newborn babies and children to identify any problems early on in their development. The proposed work deals with enhancement of nerves using thinning algorithm to examine the diseases which affects the children's eye especially retina. And this we have process on images of retina with the help of pixel processing, hall's algorithm. The enhanced images is then processed by branching to classify pixel either belonging of vessels or background. Automatic segmentation of the retinal vasculature is a first step in computer assisted diagnosis and treatment planning. The extraction of retinal vessels in children retinal images is challenging because of comparatively wide arterioles with a light streak running longitudinally along the vessel's centre, the centre vessel reflex. The testing of vision in infants and children has been treated separately from the testing of adults because infants and children often cannot be tested with the same materials and technique as adults. An accurate segmentation of retinal blood vessels (vessel diameter, colour and tortuosity) plays an important role in detecting and treating symptoms of both the retinal abnormalities and disease that affect the blood circulation and vein. This method uses a thiningalgorithm ,hall's algorithms along with pixel processing. Previous works on blood vessels detection and segmentation can be mainly divided into 3 categories: window based, classifier based and tracking based. Segmentation involves dividing images into subsections such as defining areas of an image that are appropriate to be subsequently analyzed or finding circles, lines and other shapes of interest. And segmentation can stop when objects of interest have been isolated. And segmentation of retinal vasculature from the retinal images is used in many medicine disciplines, e.g., disease identification, biometrics or image registration. Fovea segmentation is also important because some specialized, cells that provide central vision lie in it. The severity of a lesion partially depends on its distance to the fovea. OD(Optic Disc) segmentation provides great medical importance in helping other retina image analysis tasks such as vessel tracking, fovea localization, recognition of left and right eyes and finally image registration. The good quality of retinal images should enter into preprocessing technique to enhance the appearance of the blood vessels in the image. Preprocessing involves three stages such as binarization, direction and thinning. The enhanced image is then processed using technique such as thinning or branching to classify pixels as either belonging to vessels or background. The method detects the blood vessels by thresholding the retinal image's response to the matched filter, while the threshold is adjusted by the response of the image to the first order derivative of Gaussian. The next step in preprocessing



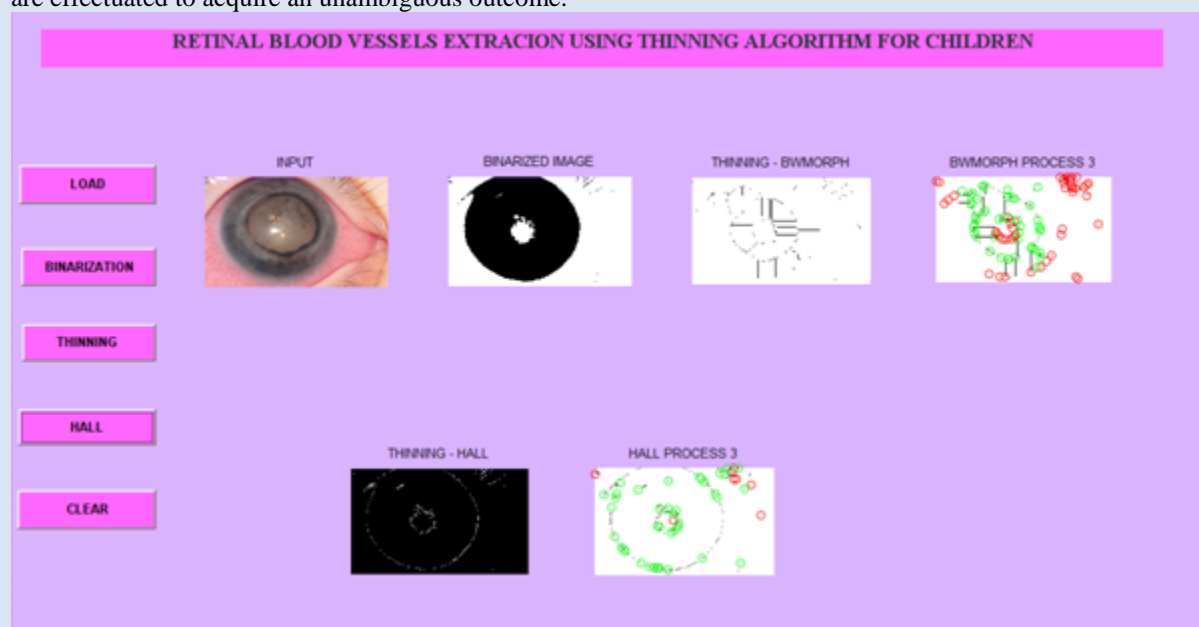
## International Journal of Current Research and Academic Review

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which is vital is the thinning process. Thinning is the process of reducing the width of each blood vessels to a one pixel value, the blood vessels is better extracted in a perfectly thinned image rather than in binarized image. Skeletonization is a form of thinning where the pixels on the boundary of the image are removed but the continuity is preserved. The implementation of the thinning process along with the minutiae extraction is done in a graphical user interface and the results have been obtained successfully. The figure given below shows the various steps involved in processing of the blood vessels in eye. The morphological thinning is represented as BWMORPH and the thinning algorithms along with the crossing number algorithm are effectuated to acquire an unambiguous outcome.



Stepwise Implementation of the blood vessels of children eye and thinning algorithm with the extraction of minutiae shown in fig 3. Halls algorithm helped in finding the affected blood vessels and the following are the diseases which occur due to the infection of the blood vessels. Diseases are retinopathy of prematurity(ROP), uveitis, sickle cell disease(SCD), coast disease.

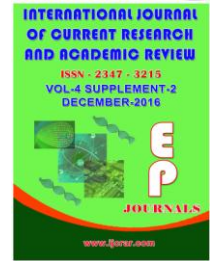
**KEYWORDS:** *Blood vessels, Child Eye, Retina and Thinning.*



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Invited Abstracts

IJCRAR/OP/20

### Enhanced Hill Cipher Algorithm using AlphaTableau & Prime Polynomial Technique

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#### Abstract

Data storage is a momentous application of cloud computing, where client can outsource their confidential data into the archive in the cloud. By using this service, client can be relieved from the burden of local data storage and maintenance. However, this new exemplar of data hosting service introduces new security issues, which requires an efficient technique to transmit the user sensitive data securely by encapsulating from the unauthorized users. Cryptography is one of the ways to attain the secured communication. In this paper, we address the security issues and devices a new method which reduces the burden of client and server in auditing process. This paper provides the different flavor to the existing symmetric key substitution Hill Cipher algorithm by using the alpha tableau method. The proposed paper develops a novel encipherment technique which will conceal the confidential data sent through the cloud. The analysis and experimental results demonstrate that our proposed scheme is secure and efficient.

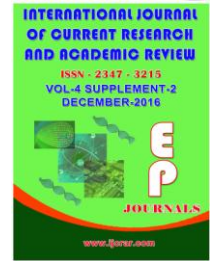
**KEYWORDS:** Key management, encryption, decryption, cloud archive



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*Invited Abstracts*

*IJCRAR/OP/21*

### Star-in-coloring of Some Special Graphs

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#### Abstract

A proper coloring of a graph  $G = (V, E)$  is a mapping  $f: V \rightarrow N$  such that if  $v_i, v_j \in E$  then  $f(v_i) \neq f(v_j)$ . In this paper we investigate the lower and upper bounds for the star-in-chromatic number of the graphs such as cycle, regular cyclic, gear, fan, double fan, web and complete binary tree. In addition we have given the general coloring pattern of all these graphs and their star-in-chromatic number.

**KEYWORDS:** Star-in-coloring, Some Special Graphs

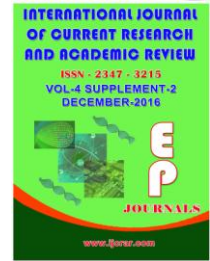




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*Invited Abstracts*

*IJCRAR/OP/22*

### A Study on Image Segmentation Techniques

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#### Abstract

Digital image processing comprises many steps for processing the digital images. Segmentation is one of the important steps in image processing which is used to divide an input image into different segments or objects with respect to the application. The key role of segmentation helps to ease the analysis and interpretation of an image. The result of segmentation is used to extract quantitative information like edges, contours, identifying objects from the images. If segmentation is done well then, the later stages in image processing are made easier. This paper is an overview of widely used segmentation techniques in which the conceptual details of four segmentation methods are discussed.

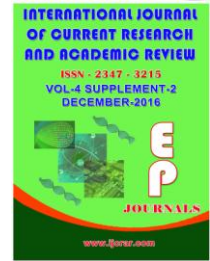
**KEYWORDS:** Segmentation, Threshold, Region Based, Edge Based, Clustering.



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Invited Abstracts

IJCRAR/OP/23

### Multi Attribute Decision Making Using Einstein Operations

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#### Abstract

In this paper a method for multi attribute decision making using Einstein operations under fuzzy environment was developed. Some interval-valued intuitionistic fuzzy geometric operators based on Einstein operations are discussed. Moreover a numerical example is illustrated to explain the proposed method.

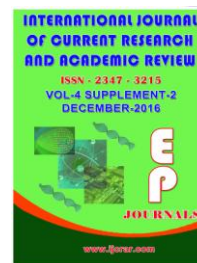
**KEYWORDS:** Multi Attribute Decision Making (MADM), Einstein Operations, Interval Valued Intuitionistic Fuzzy Numbers (IVIFN's).



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Invited Abstracts

IJCRAR/OP/24

### A New Approach for Interval Valued Intuitionistic Fuzzy Multi-Attributes Decision Making

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<sup>2</sup>Assistant professor, Department of Mathematics, Dr. MGR Janaki college, Chennai-28, India

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#### Abstract

In this paper, linear orders of interval valued intuitionistic fuzzy values are discussed. Also this paper presents some aggregation operators and their properties. Based on linear operators and aggregation operators, a new model for interval valued intuitionistic fuzzy multi-attribute was proposed. Finally a numerical example is illustrated in order to verify the proposed method. It is resistant to extreme data.

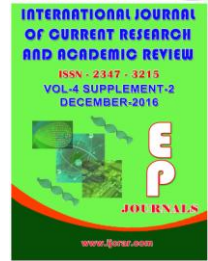
**KEYWORDS:** Interval Valued Intuitionistic Fuzzy Numbers (IVIFN's), Linear orders, Operators, Multi Attribute Decision Making (MADM).



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Invited Abstracts

IJCRAR/OP/25

### On Graph Coding through Pair Labeling

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<sup>2</sup>Department of Mathematics, Anna University, MIT Campus, Chennai-600 044.

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#### Abstract

In 2005, J.BaskarBabujee introduced a new type of coding system using graph labeling. In this paper we extend this work to encode twin numbers using the techniques of Number theory and Pair labeling.

AMS Subject Classification: 05C78

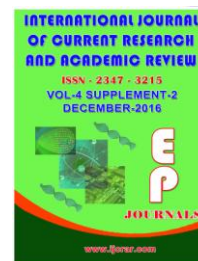
**KEYWORDS:** *prime numbers, labeled graphs, pair labeling, graph coding.*



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Invited Abstracts

IJCRAR/OP/26

### Survey to Curtail Challenges on Data Breach in Cloud Environment

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#### Abstract

In recent times, most of the data are stored online in rapid cloud expansion, which has an inherent increased security risks. To promote the cloud services in various applications, security challenges need to be solved. A data breach is an incident that involves unauthorized access of sensitive or confidential data. It includes personal health information (PHI), personally identifiable information (PII), trade secrets or intellectual property and every conceivable data that needs to be secured. Whose responsibility and how to respond the data breaches are two important questions arise in cloud environment. This paper focuses on important key themes of privacy policies, data security, availability, data storage, service level agreements and regulations. It also survived in the cloud environment data breaches using social-network approach. This encapsulates three major counter measures as social measures, network basics and environmental. While examined the foremost causes of data breach and described the counter measures to prevent the cloud system from data breaches.

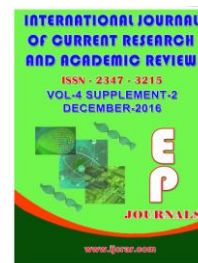
**KEYWORDS:** *Cloud security, Data storage, Privacy issues, breaches.*



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Invited Abstracts

IJCRAR/OP/27

### Technical Skills – An Analysis for the Teacher and the Taught

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#### Abstract

This study explores and analyzes the problems faced by the Computer science students in grasping the logic of the computer program on their own. Attaining a high score in semester examinations is totally different from the proper understanding of the computer programs on their own. Successful completion of degree is not directly related to their programming skill. In the campus recruitment if they are not successful in writing a simple/single program they are considered as failures. Due to this most of our students get placed in the BPO, ITES, Documentation and Software Testing jobs. A sheer drop in the recruitment process shows their lack of programming ability. After their graduation job aspirants face discomfort in completion of project work in reputed IT Companies. Once the recruited company gives 3 – 6 months practical training they acquire programming skills easily. Institutions can take an initiative and provide the required training during the graduation. In order to ascertain whether our students face difficulties in programming, a case study with 10-questions test was performed. The results have shown that our students do face difficulties. The questionnaire provides an insight to the environmental and socio-cultural effects and the difficulties experienced while learning and teaching programming. The main argument promoted in this paper is that computer programming is a cognitively challenging subject and hence good instructional strategies are important in providing the student with optimal learner support.

**KEYWORDS:** *Teaching and learning, Attaining, Grasping the logic, Computer programming, Cognitive, environmental and socio culture.*

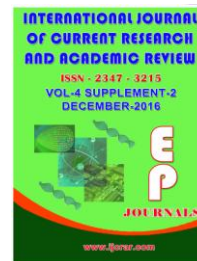




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Invited Abstracts

IJCRAR/OP/28

### Signed Product Cordial Labeling for Some Families of Graphs

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#### Abstract

A vertex labeling of graph  $G$  is a function  $f: V(G) \rightarrow \{-1, 1\}$  with an induced edge labeling  $f^*: E(G) \rightarrow \{-1, 1\}$  defined by  $f^*(uv) = f(u)f(v)$  is called a signed product cordial labeling if  $|v_f(-1) - v_f(1)| \leq 1$  and  $|e_{f^*}(-1) - e_{f^*}(1)| \leq 1$ , where  $v_f(-1)$  and  $v_f(1)$  are the number of vertices labeled with  $-1$  and  $+1$  respectively and  $e_{f^*}(-1)$  and  $e_{f^*}(1)$  are the number of edges labeled with  $-1$  and  $+1$  respectively. A graph  $G$  is signed product cordial if it admits signed product cordial labeling. In this paper we proved the existence of signed product cordial labeling for the duplication of all edges by vertices in a wheel graph  $W_n$ ,  $n \equiv 1 \pmod{2}$ , twig graph  $T_m$  for  $m \geq 3$ , shell graph  $S_n$  for  $n \geq 4$ , Y-tree  $Y_n$  for  $n \geq 4$ , web graph  $W(t, n)$  for all  $t$  and  $n$  and the graph  $K_{1,m} \diamond K_{1,n}$  for all  $m$  and  $n$ . AMS Subject Classification: 05C78

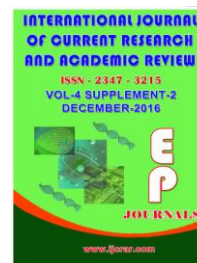
**KEYWORDS:** Graphs, labeling, cordial, bijective function.



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Invited Abstracts

IJCRAR/OP/29

### Face Magic Labeling on Double Duplication of Graphs

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#### Abstract

Let  $G=(V,E,F)$  be a finite, simple and undirected graph where  $V$ ,  $E$  and  $F$  are its vertex set, edge set and set of interior faces with  $|V|=v$ ,  $|E|=e$  and  $|F|=f$ . A labeling of graph  $G$  of type  $(a,b,c)$  assign labels from the set  $\{1,2,\dots,av+be+cf\}$  to the vertices, edges and faces by the way each vertex receives  $a$  labels, each edge receives  $b$  labels and each face receives  $c$  labels and each number is used exactly once without repetition as a label. The weight of the faces  $w(f)$  under a labeling is the sum of the labels of the face itself together with the labels of vertices and edges surrounding that face. A labeling is set to be magic, if for every positive integer  $k$  all  $k$ -sided faces have the same weight. In this paper we introduced the concept of double duplication of graphs. We proved the existence of face magic labeling of types  $(1, 0, 1)$ ,  $(1, 1, 0)$  and  $(0, 1, 1)$  for double duplication of vertex by edge of the path graph, the cycle graph and a tree. Also, we proved the existence of face magic labeling of cycle graph by duplication of edge by vertex and vertex by edge. AMS Subject Classification: 05C78.

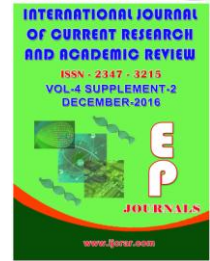
**KEYWORDS:** labeling, bijective function, double duplication graphs.



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Invited Abstracts

IJCRAR/OP/30

### Inventory Model with Ramp Type Demand, Expiration, Shortage and Salvage Value

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#### Abstract

The purpose of this work is to study a deterministic inventory model with ramp type demand. The time to deterioration is time dependent and it takes into account the salvage value and expiration dates. Shortages are allowed and partially backlogged with a variable rate which depends on the duration of waiting time upto the arrival of next lot. Sensitivity analysis are carried out to analyse the effect of changes in the optimal solution . Numerical examples are provided to illustrate our results.

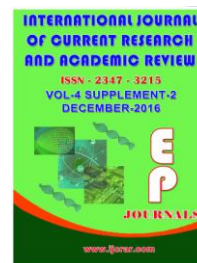
**KEYWORDS:** Ramp type Demand, Expiration, Deterioration, Salvage.



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Invited Abstracts

IJCRAR/OP/31

### On The Deneration of Solvable Leibniz Algebras

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#### Abstract

The present paper is devoted to the description of rigid solvable Leibniz algebras. In particular, we prove that solvable Leibniz algebras under some conditions on the nilradical are rigid and we describe four-dimensional solvable Leibniz algebras with three-dimensional rigid nilradical. We show that the Grunewald–O’Halloran’s conjecture “any  $n$ -dimensional nilpotent Lie algebra is a degeneration of some algebra of the same dimension” holds for Leibniz algebras of dimensions less than four. The algebra of level one, which is omitted in the 1991 Gorbatsevich’s paper, is indicated.

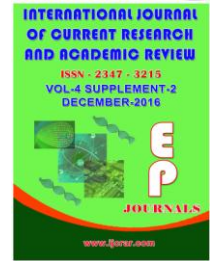
**KEYWORDS:** *Some basic notation.*



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Invited Abstracts

IJCRAR/OP/32

### A Level Set Approach for Computing Solutions to Incompressible Two-Phase Flow

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#### Abstract

A level set approach for computing solutions to incompressible two-phase flow is presented. The interface between the two fluids is considered to be sharp and is described as the zero level set of smooth function. We use a second order projection method which implements a second order upwinded procedure for differencing the convection terms. A new treatment of the level set method allows us to include large density and viscosity ratios as well as surface tension. We consider the motion of air bubbles in water and falling water drops in air.

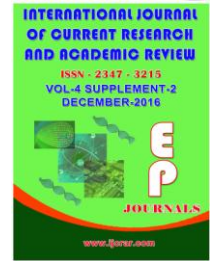
#### KEYWORDS:



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Invited Abstracts

IJCRAR/OP/33

### A Study on an Application of Coset Decomposition Method to the Theory of Decoding Linear Codes

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#### Abstract

An application of the decomposition of a group into cosets of a subgroup to the theory of error detecting and correcting linear codes is discussed. A simple algorithm is put up based on the general method for decoding linear codes known as syndrome decoding. This algorithm is applicable to not only binary codes but also general codes over  $\mathbb{Z}_p$ ,  $p$  is a prime

**KEYWORDS:** Finite groups; coset enumerations; decoding problem; syndromedecoding.

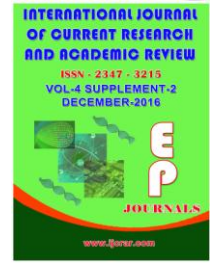




## International Journal of Current Research and Academic Review

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Invited Abstracts

IJCRAR/OP/34

### Clustering Techniques in Data Mining - An Overview

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#### Abstract

Data mining (or knowledge discovery in databases) is the process of autonomously extracting useful information or knowledge (“actionable assets”) from large amounts of data. Data mining can be viewed as a result of the natural evolution of information technology. It can be performed on a variety of data stores, including the World Wide Web, relational databases, transactional databases, internal legacy systems, PDF documents, and data warehouses. Clustering is a useful technique that organizes a large quantity of unordered text documents into a small number of meaningful and coherent clusters, thereby providing a basis for intuitive and informative navigation and browsing mechanisms. Partitional clustering algorithms have been recognized to be more suitable as opposed to the hierarchical clustering schemes for processing large datasets. A wide variety of distance functions and similarity measures have been used for clustering, such as squared Euclidean distance, cosine similarity, and relative entropy. Clustering is a division of data into groups of similar objects. Representation of data models by its clusters. Data modeling puts clustering in a historical perspective rooted in mathematics, statistics, and numerical analysis. From a machine learning perspective clusters correspond to hidden patterns, the search for clusters is unsupervised learning, and the resulting system represents a data concept. From a practical perspective clustering plays an outstanding role in data mining applications such as scientific data exploration, information retrieval and text mining, spatial database applications, Web analysis, CRM, marketing, medical diagnostics, computational biology, and many others. Clustering is the subject of active research in several fields such as statistics, pattern recognition, and machine learning. This paper focuses on clustering techniques in data mining. Data mining adds to clustering the complications of very large datasets with very many attributes of different types. This imposes unique computational requirements on relevant clustering algorithms. A variety of algorithms have recently emerged that meet these requirements and were successfully applied to real-life data mining problems. They are the subjects of this paper.

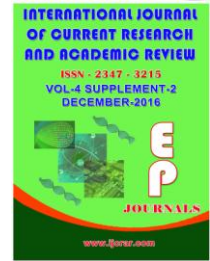
**KEYWORDS:** *Clustering, partitioning, data mining, unsupervised learning, exploratory data analysis, hierarchical clustering, probabilistic clustering.*



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Invited Abstracts

IJCRAR/OP/35

### Magic Labeling of the Generalized Web Graph $W_o(t, n)$ without the Central Vertex

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#### Abstract

A graph  $G = (V, E)$  is said to be magic if there exists a bijection  $f : V \cup E \rightarrow \{1, 2, 3, \dots, |V(G)| + |E(G)|\}$  such that for all edges  $uv$  of  $G$ ,  $f(u) + f(v) + f(uv)$  is a constant. A graph  $G$  is magic if it admits a magic labeling. In this paper, we obtain the magic labeling of the generalized web graph  $W_o(t, n)$  without the central vertex when  $n$  is odd.

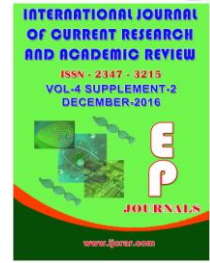
#### KEYWORDS:



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Invited Abstracts

IJCRAR/OP/36

### An Essential Role of Statistical Process Control in Industries

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#### Abstract

In order to endure in a competitive market, getting better quality and production of product or process is a must for any industry. Statistical Process Control (SPC) is an efficient controlling methodology for *analyzing*, monitoring, managing and recuperating process performance. Biggest benefits for implementing SPC in industries are enhanced quality products and condensed process variation. The objective of this paper is to examine SPC implementation in the industry setting by applying systematic literature review, and to explore the comprehensiveness of SPC applications in the industry. This review systematically identified from more than 41 studies published between 1980 and 2014, depicting evidence of SPC application sparsely spread throughout the industry and a need to pursue more research in this area.

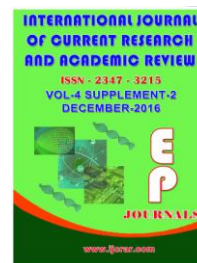
**KEYWORDS:** *Statistical Process Control, control charts, Industries. The company should endeavor for the execution of SPC tools for productivity development. SPC implementation is significant as it could improve process performance by plummeting product variability and improves production efficiency by lessening scrap and rework. The SPC thus helps the organization to observe the process activities in a better way.*



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Invited Abstracts

IJCRAR/OP/37

## An Invitation to the Theory of Subordination

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### Abstract

This compilation is an invitation to the theory of subordination functions. The foundation techniques in the field are explained and some developments mentioned. We will begin with the basic terminologies and concepts, then some subjects of inquiry in geometric functions theory. The main emphasis is on the important class of subordinate functions and their relations with various other classes of functions. The compilation will be accessible to a general mathematical audience. Let us consider the complex-valued functions which are analytic in simply connected proper subdomain of the complex plane. We consider functions of one complex variable. Such a function (say  $g$ ) is said to be analytic (regular or holomorphic) at a point  $z_0$  in its domain if it is complex-differentiable there. Because these functions are analytic (and thus complex-differentiable of all orders), they have Taylor series developments about each point in their domain. They are thus expressible in certain series forms with centres at  $z_0$ . Since by simple translation the nonzero centres  $z_0$  may be shifted to zero, we may assume without loss of generality that the centres of the series developments of these functions are the origin. Thus an analytic function  $g$  may be expressed as:  $g(z) = b_0 + b_1 z + b_2 z^2 + b_3 z^3 + \dots$ . By Cauchy integral formula, the coefficients  $b_k = g^{(k)}(0)/k!$  Where  $g^{(k)}(0) = \frac{k!}{2\pi i} \int_{\Gamma} \frac{g(w)}{w^{k+1}} dw$  over  $\Gamma$ ,  $\Gamma$  is a rectifiable simple closed curve containing the origin, and  $g$  is analytic inside and on it. The function  $g(z)$  is said to be univalent if it does not take the same value twice. That is if  $z_1, z_2$  are points in the domain (say  $D$ ) of  $g$ , then,  $g(z_1) = g(z_2) \Rightarrow z_1 = z_2$ ; Put another way,  $(z_1 \neq z_2 \Rightarrow) g(z_1) \neq g(z_2)$ ; for all  $z_1, z_2 \in D$ .

### The Unit Disk:

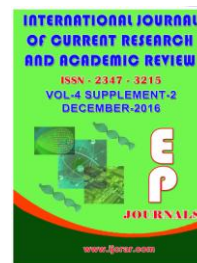
Let  $D_1 \subseteq C$  be simply connected. If  $z_0 \in D_1$ , then there exists a unique function  $g(z)$ , analytic and univalent which maps  $D$  onto the open unit disk  $D$  in such a way that  $g(z_0) = 0$  and  $g'(z_0) > 0$ . Thus with the univalence (and thus conformality) of  $g$ , any simply connected proper subset of the complex plane can be mapped conformally onto the open unit disk. Furthermore, since inverse image of a conformal map is also conformal, it follows from the RMT that simply connected proper subsets of the complex plane are conformal equivalents. In particular, simply connected proper subsets of the complex plane are conformally equivalent to the unit disk, so that many varieties of problems about such domains are invariably reducible to the special case



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of the open unit disk.

### Normalization:

The function  $g$  shall be normalized such that:

- (i) it takes the value zero at the origin (that is it takes the origin to the origin,  $g(0) = 0$ ) and
- (ii) its derivative takes the value 1 at the origin, that is  $g_0(0) = 1$ .

General Results regarding Holomorphic functions:

Let  $C$  be the complex plane,  $C^* = C \setminus \{0\}$ , and let  $C_\infty = C \cup \{\infty\}$  be the extended complex plane. Let

$U(z_0; r) = \{z \in C : |z - z_0| < r\}$  be the disc of centre  $z_0 \in C$  and radius  $r$ . Also, let be the closed disc of centre  $z_0$  and radius  $r$ , and let

$$\partial U(z_0; r) = \{z \in C : |z - z_0| = r\}$$

be the circle of centre  $z_0$  and radius  $r$ . The disc  $U(0; r)$  is denoted by  $U_r$  and the unit disc  $U_1$  is denoted by  $U$ .

Let  $\Omega \subseteq C$  be an open set. We denote by  $H(\Omega)$  the set of holomorphic functions defined on

$\Omega$  with values in  $C$ . Holomorphic functions on the whole complex plane are called entire functions.

**Subordination.** Holomorphic functions

### Definition :

Let  $f, g \in H(U)$ . We say that  $f$  is subordinate to  $g$  (and write  $f \prec g$ ) if there is

a Schwarz function  $v$  (i.e.  $v \in H(U)$  and  $|v(z)| \leq |z|$ ,  $z \in U$ ) such that  $f(z) = g(v(z))$ ,  $z \in U$ .

If  $g$  is univalent (holomorphic and injective) on  $U$ , then the next characterization of subordination holds.

### Theorem :

Let  $f, g \in H(U)$  be such that  $g$  is univalent on  $U$ . Then  $f \prec g$  if and only if

$$f(0) = g(0) \text{ and } f(U) \subseteq g(U).$$

### Remark :

The following result is known as the subordination principle.

If  $f, g \in H(U)$  such that  $f(0) = g(0)$ ,  $g$  is univalent on  $U$ , and  $f(U) \subseteq g(U)$ , then  $f(U_r) \subseteq g(U_r)$ , for all  $r \in (0, 1)$ .

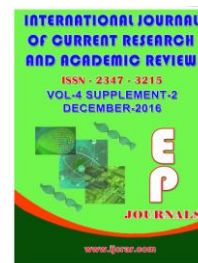
**KEYWORDS:** *Holomorphic Functions, Univalent Functions.*



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Invited Abstracts

IJCRAR/OP/38

### Money Pad-The Future Wallet

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#### Abstract

“Money in the 21st century will surely prove to be as different from the money of the current century as our money is from that of the previous century. Just as fiat money replaced specie-backed paper currencies, electronically initiated debits and credits will become the dominant payment modes, creating the potential for private money to compete with government-issued currencies.” Just as everything is getting under the shadow of e-today we have paper currency being replaced by electronic money or e-cash hardly a day goes by without some mention in the financial press of new developments in “electronic money”. In the emerging field of electronic commerce, novel buzzwords like smartcards, online banking, digital cash, and electronic checks are being used to discuss money. But how are these brand-new forms of payment secure? And most importantly, which of these emerging secure electronic money technologies will survive into the next century? These are some of the tough questions to answer but here’s a solution. Which provides a form of security to these modes of currency exchange using the “Biometrics Technology”? The Money Pad introduced here uses the biometrics technology for Finger Print recognition. Money Pad is a form of credit card or smart card, which we name so. Every time the user wants to access the Money Pad he has to make an impression of his which will be scanned and matcher with the one in the hard disk of data base server. If the finger print matches with the user’s he will be allowed to access and use the Pad otherwise the Money Pad is not accessible. Thus providing a form of security to the ever-lasting transaction currency of the future” e-cash”.

**KEYWORDS:** Money Pad, electronic money