CLOUD COMPUTING

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From the Desk of Chairman, Publication Committee

Dear Fellow Members,

Greetings.

The previous issues of CSIC brought out invited articles by Prof. V Rajaraman, a pioneer in the field of Computer Science, on the history of computing, Xerox PARC and personal computing. Coming from an eminent person like Prof. Rajaraman, these articles add credibility to the issues. We look forward to many more from him. This issue carries additional articles on Blockchain Technologies. The future issues of CSIC would carry similar types of articles on other areas of computer Technology.

Prof. Richard Ernest Bellman was an American applied mathematician who introduced dynamic programming in 1953. He made important contributions in the fields of mathematics and computer science. Dynamic Programming is a powerful optimization method which is used in algorithms that solve problems as diverse as DNA sequence alignment and computer chess. Bellman-Ford Algorithm which is very famous, is a shortest path finding algorithm that is used in network routing. His works specially on Artificial Intelligence, decision making and man-machine interaction are also significant. Richard Bellman's name is associated with courses dealing with Computer Science. Needless to say, that his contributions serve as big motivation to our fellow members.

CSI would be happy to publish monographs on important areas of Computer Technology/Science. Those who are interested may submit details either to me/President.

Computer Society of India Annual Convention 2020 will now be held at Bhubaneswar, India from 16-18 January 2020 on the theme of Digital Democracy – IT Change. IT experts from industry and govt., will be present on this occasion and would deliver key note addresses/invited lectures. Please submit quality papers for presentation at the Conference and participate in large numbers.

With best compliments,

Dr. D. D. Sarma
Chief Scientist (R), CSIR-NGRI, Hyderabad.

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Editorial

Prof. (Dr.) S. S. Agrawal
Chief Editor

Dr. Ritika Wason
Editor

Dear Readers

"*The interesting thing about cloud computing is that we've redefined cloud computing to include everything that we already do.*" - **Larry Ellison**

The above quote by Larry Ellison, Chairman Oracle signifies the current transformation and the adoption and implementation of Cloud Computing by businesses one and all. Generically explained, Cloud computing denotes the service on demand framework that offers data storage as well as computing power services to the customers without any direct involvement of the user for uninterrupted service availability.

Continuing with our invited series Titbits from the History of Computing –III by the legendary Prof. V. Rajaraman, this issue reports, "The first portable computer – Osborne 1". This article beautifully outlines how the Osborne 1 came to realization. First article of cover story, "Cloud Computing: An Overview" by Himani Mittal discusses the basic architecture of the cloud. The next story entitled, "Cloud Computing: Applications, Challenges and Open Issues" by Sahil Mishra and Sanjay Kumar Panda clarifies how the cloud can be applied in the society and what are the open challenges for the same. The varied scalabilities for the cloud has been elaborated in "Cloud computing models and scalability" by M. Senthil Kumar, B. Chidambara Rajan, M. Rajakumar and P. Kiruthika. The intrinsic of the cloud computing and the different platforms on offer are further elaborated in the article, "Cloud Computing: A Complete Study" by A. R. Revathi and Shwettha. M. The inter-relationship between cloud and the customer has been elaborated in the article "An Indispensable Emerging Technology to Every One - Cloud Computing" by Jeevanantham S., S.Suseela, M. Saravanan and A. Kavitha.

The research front section showcases the how cloud can be used to implement varied novel services like IoT analytics. The first article "Leveraging Cloud Platform for Big Data-A Technical Analysis" by Anitha Premkumar and Kolavasi Vaishnavi showcases the impediments faced by cloud when used with big data. The article "IoT Enabled Trans-disciplinary Research using ThinkSpeak Cloud" by K.K. Baseer and T. Satyendra Kumar introduces Thing Speak, an IoT analytics platform service that allows aggregating, visualizing, and analysing live data streams in the cloud.

The issue also reports important activities, events, collaborations done by various institutions and chapters of CSI and CSI congratulates them for conducting such activities. Various student branch inaugurations and activities have also been highlighted. The issue also contains calls for upcoming CSI annual convention CSI20 and other conventions.

We are extremely thankful to all our contributors as well as readers. Original, plagiarism-free, unpublished articles are solicited throughout the year from CSI members as well as non-members. Our sincere gratitude to the CSI publication committee members, editorial board members, authors and reviewers for their great contribution and support in realising this issue.

Our special thanks to Prof. A. K. Nayak, President, CSI for his constant encouragement, support and guidance in publication of October, 2019 issue.

We look forward to receive constructive feedback and suggestions from our esteemed members and readers at csic@csi-india.org

With kind regards,

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Chief Editor
Director General KIIT, Former Emeritus Scientist CSIR,
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Editor
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President's Desk

From	:	President, Computer Society of India
Date	:	01 October, 2019
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Modern technology enabled society with the help of data communication & high speed networking is making the best use of the power of ICT in transferring the functioning of the Business, Services, Industries, Academics, Health Care, Hospitalities,Science & Technology, Defence, Research & Society as a whole. The trends &use of connectivity & inter connectivity in ICT applications given rise to the concept of Cloud Computing.

Cloud Computing is the use of network of remote servers hosted on the Internet to store, analyze, manage & process data. It is tremendously changing the way of doing business. More & more business functions are moving to the cloud making them cheaper & reliable. The impact of the same in the small business are most dynamic which is helping in Data sharing & Back up, telecommunications, Enterprise Resource Planning, Customer Relationship Management & Productivity Software.

The theme of this issue of CSI communication Cloud Computing is of great importance as it will focus on technology innovation, related applications and trend setting initiatives in the concerned area. Different sectors will experience the great contribution of this computing technology in the current decade but the benefits of the same should be completely and uniformly understood and utilized by the users & the Society.

CSI Annual Convention

The CSI Annual Convention shall be held at Bhubaneswar, Odisha on 16th,17th & 18th January 2020 with the theme "**Digital Democracy-IT for Change**" for which the dedicated & devoted Members of the Bhubaneswar Chapter are making their best efforts to make the convention excellent & scale of height. I congratulate the Organising Secretary Mr. Sanjay Mohapatra for his effective coordination with Mr Manas Patnaik, Convenor , Co Convener, Er. N. K. Behera, & Chairmen of different Committees for their pioneer effort to bring this great event in to action. I also express my sincere thanks to the Authorities of KIIT university for providing the venue & other support for this great cause. I request all the concerned for their kind presence for enhancing the strength, efficiency, visibility, productivity & effectivity of CSI.
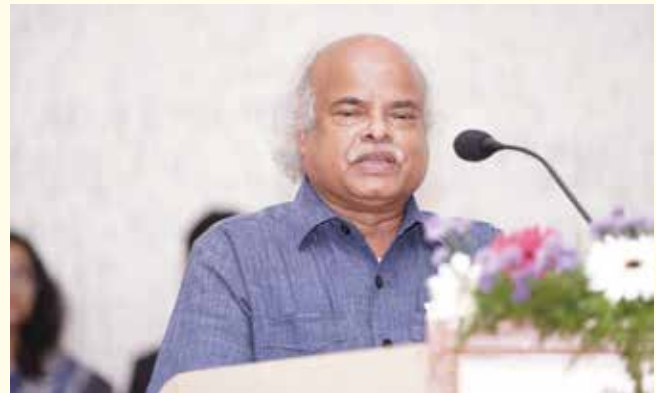
Activities & Events

The Society has witnessed more than 60 activities & evens in last month comprising of National Workshops, Seminars, Regional Meetings, Industry visit, Seminars, Workshops by the chapters,Technical Talks & student branch activities which clearly reflect the dynamism, vibrancy & activeness of the Society. I express my sincere thanks to all the concerned Chapter MC , National ExeCom Members & Student Branch Coordinators along with Members & Student Members for their efforts to bring the society to scale of excellence.

CSI Elections

This Issue also contains the Call for Nominations of CSI elections for the National ExecCom & NC members for the year 2020-21/22 as well as notification for Chapter elections for the year 2020-21/22. My sincere request to all the voting members for their larger participation in the democratic process to elect the most suitable & able candidates for the respective positions.

Let us come forward to make Clean CSI & Green CSI with transparent activities & visions to make it Swachh, Pardarshi & hara vara.

Wishing you all very happy Vijaya Dashami & Cheerful Diwali.
With warm regards,

AKNayak

Prof. Akshaya Nayak
President, CSI

Titbit from the History of Computing – 3
The first portable computer – Osborne 1

▶ **V. Rajaraman**
Emeritus Professor in the Supercomputer Education and Research Centre, Indian Institute of Science, Bangalore

"Those who do not remember the past are condemned to repeat it" – *George Santayana*

The Cambridge dictionary meaning of titbit is "A small and particularly interesting item of gossip or information"

Xerox Notetaker

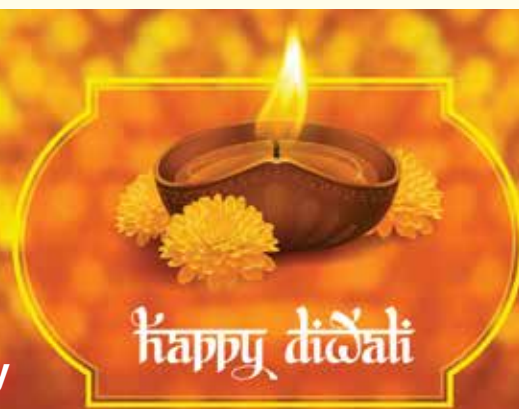Alan Kay had dreamed of a computer in 1972 he named Dynabook that was to be "A personal computer for children of all ages". It was to be like a tablet computer that we use today. Technology was not available in 1972 to realise his dream. However, his idea was liked by his colleagues at Xerox PARC and resulted in the Alto personal computer I described in the second article of this series. Alto was not portable. When 16-bit microprocessors appeared in 1978 the idea of portable computer that one could take anywhere was resurrected by his colleagues at Xerox PARC, Douglas Fairbairn, Adele Goldberg, and Larry Tesler. They built a portable computer called Xerox NoteTaker [1] in 1978 that they said was "designed as a personal tool to be its user's constant companion". NoteTaker could be accommodated in a case with dimensions 53 cm (L) × 35 cm (W) × 18 cm (H) and weighed 22 Kg. The CPU was an Intel 8086 (16-bit processor) using a 5MHz clock and 256 KB RAM (quite large in 1978). It had a monochrome 17.8 cm (diagonal) touch sensitive display (640 × 480) pixels, 340 KB floppy drive, a mouse, 300 bps modem, Ethernet card, and a rechargeable battery (2 to 3 hours). The OS was Smalltalk. It cost $5000. Only 10 prototypes were made. The design team tried hard to convince

Xerox Notetaker
(photo courtesy history-computer.com)

Xerox management to produce and

market it. Xerox management initially showed some interest but decided not to produce it and consequently it died.

Osborne 1 Portable Computer

Adam Osborne visited Xerox PARC sometime in 1979, was excited when he saw the NoteTaker, and decided to build one and market it. It is interesting to look at his background and what brought him to Xerox PARC.

Adam Osborne
(Photo thanks alchetron.com)

Adam Osborne [2] was born in 1939 in Bangkok, Thailand to a British father and a Polish mother. When the second world war broke out, his parents moved to India as Adam's father Arthur Osborne was a devotee of Sri Ramana Maharishi of Thiruvannamalai in Tamil Nadu. Adam Osborne was admitted to a boarding school in Kodaikanal, a hill station in Tamil Nadu, and studied there till he was eleven years old. He could converse fluently in Tamil. The family moved to England in 1950 and Adam Osborne completed his schooling there. He obtained a Bachelor's degree in chemical engineering from the Birmingham University in 1961 and moved to the United States, following his girlfriend, and obtained a Ph.D. in chemical engineering from the University of Delaware in 1968. His thesis required extensive programming and he became computer savvy. Subsequently he joined the Shell Oil Company in California but was not very happy working there and was dismissed in 1971. The decade of 1970s was an exciting time in northern

California. Intel 8008 was launched in 1972 and a number of hobbyists started building their own computers using it. Osborne had a flair for writing and lucidly explaining difficult technical subjects. He launched a publishing company Osborne Associates in 1972. He wrote technical manuals for several computer companies. In 1976 he wrote the first book on microcomputers titled "Introduction to Microcomputers" and published it. I remember to have bought one as it was an inexpensive paperback book printed using newsprint. His book became instantly popular and sold over 300,000 copies and was translated to many languages. He wrote successive volumes on various aspects of microcomputers and persuaded others to write books related to microprocessor hardware and software. By 1977 there were around 40 titles. McGraw Hill publishing company acquired his company in 1979 for a few million dollars. With cash in hand he was looking to enter new avenues and the Xerox PARC visit was opportune. In 1980 he met Lee Felsenstein, a hardware designer, at the West Coast Computer Faire and convinced him to join his company Osborne Computer Corporation to build a portable computer.

Osborne 1, a portable computer was released on April 1981. The size of the computer was 22.9 cm (height), 52.0 cm (length), and 22.7 cm (depth). The keyboard folded and the computer became a box that could be carried like a briefcase and weighed 10.7 Kg. It did not have a built-in battery and had to be plugged into the mains power for functioning. The computer could be easily tucked under an airline seat. (Nowadays this computer is described as "luggable" as it is heavy). It used Zilog Z80 (an 8-bit processor) with 4 MHz clock as its CPU, 64 KB RAM, 4 KB ROM, two 5.25 inch floppy disks (102KB each), RS 232 interface, IEEE-488 interface, a modem interface, 5 inch - 52 characters - 24

lines monochrome display and a fold-down 69 key detachable key board doubling as the computer's lid. Osborne described the performance of the computer as adequate for most purposes. The most attractive feature of Osborne 1 was its software that was bundled. The software consisted of CP/M OS, WordStar word processor, SuperCalc spreadsheet, Microsoft BASIC, CBASIC of Digital Research, Mailmerge for email, and dbase II.

Osborne 1 Portable Computer (Photo thanks to history-computer.com)

Osborne 1 advertisement. The person on the right is carrying an Osborne 1 computer.

The computer with the software cost $1795. It was considered at that time a bargain as the software itself, if licensed separately, would have cost around $1500.

Osborne Effect

Osborne 1 was well received and 100,000 units were sold in the first six months and approximately 10,000 per month thereafter. Osborne made a strategic mistake by prematurely announcing a better model he named Osborne Vixen before it was ready. The distributors stopped ordering Osborne 1 in anticipation of the new model and some cancelled their orders. Osborne was left with a large inventory of unsold Osborne 1. There was a sudden cash crunch and Osborne was not able to raise working capital and the company collapsed and declared bankruptcy in 1983. Announcing a new model prematurely leading to customers cancelling orders of an existing model and postponing buying decision was named *Osborne effect*. Osborne argued in 1984 in his biography [3] that the reasons for closing down his company were more complex. His company was under capitalised. Sales of Osborne 1 hugely surpassed his expectations. The company was buying components for cash whereas the income from distributors who sold the computers was delayed. The company was not able to get advances from banks leading to severe cash flow problems. At the same time two companies, Kaypro and Compaq announced portables. One of them, Compaq, announced an IBM PC compatible portable computer using MSDOS. Computers using CP/M OS were going out of fashion. All these conspired leading to Osborne Computer Corporation closing down.

Software Publishing

Adam Osborne was not one to easily give up. He saw an opportunity in software publishing, He felt that software systems being sold were over-priced and was not affordable. His idea was to price them similar to books and market them through book stores. In 1984 he founded Paperback Software International Ltd. He wrote popular software such as word processor NewWord, database software VP-info, and spread sheet program VP-Planner. The software disk was placed inside the cover of a manual that explained how to use the software. The software was reasonably priced around $100 whereas similar software by big companies cost $500. In 1987 Lotus 1-2-3 filed a case accusing that Osborne's VP-Planner had the same look and feel menu interface as their product and violated Lotus's copyright. While the case dragged on it made it difficult for Osborne to get venture capital to expand his company. Lotus won its case in 1990. This led to the closure of Paperback Software.

In 1992 Osborne was diagnosed with a brain disorder that led to mini strokes. He came to Kodaikanal to stay with his sister Katya Douglas (who had settled down there) and briefly ran an India-based publishing venture [4]. Adam Osborne died in 2003 at the age of 64.

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About the Author

Prof. V. Rajaraman (CSI Fellow), Ph.D. (Wisconsin), is Emeritus Professor in the Supercomputer Education and Research Centre, Indian Institute of Science, Bangalore. Earlier Prof. Rajaraman was Professor of Computer Science and Electrical Engineering at IIT, Kanpur (1963-1982), Professor of Computer Science, and Chairman, Supercomputer Education and Research Centre, Indian Institute of Science, Bangalore (1982-1994) and IBM Professor of Information Technology, Jawaharlal Nehru Centre for Advanced Scientific Research (1994-2001).

A pioneer in Computer Science, education and research in India, Prof. Rajaraman was awarded the Shanti Swarup Bhatnagar Prize in 1976. He is also the recipient of Homi Bhabha Prize by U.G.C., Om Prakash Bhasin award, ISTE award for excellence in teaching computer engineering, Rustam Choksi award, Zaheer Medal by the Indian National Science Academy, Padma Bhushan by the President of India in 1998, and lifetime contribution award by the Indian National Academy of Engineering and Computer Society of India. He was awarded DSc (h.c.) by IIT, Kanpur and by Bengal Engineering and Science University, Sibpur. An author of several well established and highly successful computer books, Prof. Rajaraman has published a large number of research papers in reputed national and international journals. (A detailed biodata may be found in en.wikipedia.org/wiki/Vaidyeswaran_Rajaraman).

Cloud Computing : An Overview

▶ Himani Mittal
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1. Introduction

Cloud computing provides a platform or service through internet. User needs minimum hardware and software installed. User data, applications and even infrastructure are provided via networks. Google drive, One drive, google photos are examples of some popular data storage clouds. Facebook, Gmail, creative cloud of adobe are examples of cloud applications. Using mobile phone to connect to a powerful server for processing complex data is usage of infrastructure as a service.

Cloud Computing Architecture

2. Definitions

Cloud refers to a network may be public or private, on a LAN or WAN on which applications or infrastructure is deployed remotely and user can access it to meet their personal and business needs. User has to pay-for-per-use scheme. The infrastructure and applications are provided by separate entity and user will use these services.

Cloud computing is combination of hardware and software based resources delivered as a network service.

3. Cloud Computing Architectures

As can be seen in the image the servers and storage are available as a cloud. Here the server, storage or applications can be accessed by user via network.

Cloud computing architecture refers to the components and subcomponents required for cloud computing. These components consist of a front-end client device (workstation or mobile device), back-end devices (application or database or network servers or storage), a cloud based delivery, and a network. The network may be internet, intranet or interCloud.

4. Models of Cloud

There are certain service and deployment models working behind the cloud. These are discussed below.

a) Deployment Models: It defines how the cloud is accessible. It consists of fourmodels: First, Public cloud is accessible publically eg. gmail. Second, Private cloud is accessible within the organization eg, internal application in a company. Third, Hybrid cloud is a mix of previoud two types. Last, Community cloud is accessible by a group of organizations.

b) Service Models: These are the reference models which define the type of service cloud offers. These models include Infrastructure based service (IAAS), Platform based service (PAAS) and Software based service (SAAS). IAAS is on demand and scalable delivery of technology infrastructure. It provides facility like virtual machines, physical machines. The user billed based on usage. Examples of IAAS is At&t cloud and Google compute Engine. PAAS provides runtime environment for applications that is operating system. Examples are Microsoft Azure and Amazon Web services. SAAS provides software as a service. Examples Google and facebook.

5. Applications of Cloud Computing

a) Ready to use infrastructure and hardware under IAAS and PAAS. One example is Cloud storage.

b) Common Testing and development platforms on the cloud.

c) Big Data Analytics uses cloud to collect both structures and unstructured data, example financial behavior of clients and buying tendencies. Facebook and Google both SAAS are already harnessing such data.

d) Cloud Storage and backup is a portable way of storing data which can be accessed anywhere anytime.

e) Disaster recovery using cloud is cost effective as multiple physical locations can be reached using same platform.

6. Challenges and Research Questions

The open challenges and research questions in cloud computing are:Security, Cost, Law, Compliance and IT Policy, Managing multiple clouds, Performance and Scalability and; Migration of legacy applications

7. Conclusion

Cloud computing is revolutionizing the way organizations and users compute. It brings with it the ease of on-stop-solutions for all the customer needs. It frees the user from maintaining the hardware and software and derive the benefits of the facility.

8. References

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[2] https://en.wikipedia.org/wiki/Cloud_computing_architecture accessed on 18 Sep, 2019

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[4] https://www.datapine.com/blog/cloud-computing-risks-and-challenges/ accessed on 18 Sep, 2019

About the Author

Dr. Himani Mittal is an Assistant Professor at Goswami Ganesh Dutta SD College, Chandigarh. She has 10 years of teaching experience. She did MCA and Ph.D. from Panjab University, Chandigarh. She has a research interest in Artificial Intelligence and Networking. She has a dozen papers to her credit.

Cloud Computing:
Applications, Challenges and Open Issues

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Background:

Cloud computing is one of the innovative computing, which deals with storing and accessing data and programs over the Internet [1]. It is the delivery of computing resources and services, such as storing of data on servers and databases, providing networking facilities and software development platforms over the Internet. It provides the flexibility of resources for everyone. These services are provided via data centers, which are located in various parts of the world [2, 3]. Cloud computing makes access to these resources to everyone on a global scale at a very minimal cost and significantly higher speed. These servers provide services to the users, which would have cost a lot of computational power to them if they had to buy them. The first mention of cloud computing was referenced in a Compaq internal document released in 1996 [4]. Cloud computing was then commercialized in 2006 when Amazon released elastic compute cloud (EC2). Furthermore, Google released Google app engine in 2008 and Microsoft Azure services were launched in October 2008, which increased the competition in the area of cloud computing. Since then these companies have done a lot of development in cloud computing.

Types and Services:

All the servers or clouds are not identical and one of the clouds is not fulfilling the requirements for everyone. As a result, there are various architectures and models of clouds, which serve the specific purpose based upon the needs of the users. There are three ways to run cloud services, namely public cloud, private cloud and hybrid cloud. The third-party cloud service providers own the public cloud and they provide the users with the storage services on servers and databases over the Internet. Moreover, they provide a lot of other services like virtual machines for processing large amounts of data and programs, which is not possible to be processed on a single computer [5]. Private cloud, as the name suggests, refers to the resources provided to a single organization, located locally in its premise or sometimes hosted on the off premise. It is usually used by organizations due to the sensitivity of the data and other privacy concerns. On the other hand, hybrid cloud is the mixture of resources of public cloud and private cloud by permitting the data and programs to be shared between them. It plays an important role when the computing and processing demand fluctuates [6]. It allows the seamless scale-up of resources to a public cloud to handle the fluctuating demand, without giving third-party access to the entire data. The sensitive data lies safely behind the firewall. These clouds offer various types of services in which infrastructure as a service (IaaS) is one of them. It offers services that include remote access of a full-pledged computer infrastructure, like virtual computers, servers, storage devices, etc. The other service offered by the cloud is platform as a service (PaaS), which allows user to host the application on remote server. It provides required resources, such as middleware, database, operating system, networking and many more. The third type of service is software as a service (SaaS), which provides the applications to the users via the Internet.

Applications in Society:

Cloud computing is used in various sectors of society. Government organizations use the cloud to store the data of various departments. They make the use of IaaS to store data on the servers. They even host applications on the cloud using PaaS. Some organizations use the private cloud due to sensitive data [7]. Cloud computing has made it easy for the government organizations to share data and collaborate among various departments. National informatics centre (NIC) offers the cloud services to various government organizations in India. It provides a private cloud to handle the jobs of Indian government organizations. It is responsible for hosting websites and handling data of various examinations conducting councils and ministries. Multiple business organizations and industries make use of PaaS and SaaS to host their applications on the Internet and make them available to the users. SaaS is used by Google to provide various applications to users over the Internet, such as Google documents, sheets, slides and forms. Google also provides a Google cloud platform (GCP), which offers all the services (i.e., IaaS, PaaS and SaaS). GCP is used by many software developers to build and deploy applications at a very low cost. It is even used to collaborate with other users and it also offers them the flexibility to expand according to their needs at a very low cost. Various companies and organizations also use GCP for training machine learning and deep learning models.

Challenges and Open Issues:

In the month of January 2018, RightScale initiated its annual survey on the trends of cloud [8]. They interviewed 997 technical professionals working in different organizations using the cloud. They found various challenges cloud, which are presented as follows. Security and privacy have always been a concern for cloud computing. The third-party service providers can access the data of users and may sell it to other organizations, without any permission from the user. The data can be misused for many purposes like identifying personality trait of a particular user and its political interests of the user. According to the cloud security alliance, the main threats posed to data. This is due to insecure interfaces and application programming interface (API), data loss and leakage, and hardware failure [4]. The other privacy concern is the hacking. If the hackers hack the data servers, they would be getting a handful of the sensitive data of various users across the globe. As a result, as far as privacy concerns, some government

and private organizations prefer using the private cloud. It provides physical control of data and more security than keeping it in the public cloud.

Cloud computing is very cost efficient for the users as well as the organizations. They can easily expand their processing capabilities, without spending large amounts of money in the hardware. However, on-demand availability and scalability of cloud computing make it harder to predict the required quantity in future [5]. Even the server failures due to lack of maintenance incur huge losses. The other big challenge cloud computing faces are the lack of resources like data centers and cloud engineers. As the time is changing, the users of cloud computing are increasing at an exponential rate, which may result in failure of data centers. This puts a lot of pressure on the service providers to get enough resources for the huge number of users. This also incurs a lot of cost to them. Even the power consumption by these data centers is quite high. Therefore, service providers like Microsoft are trying to reduce it by putting the data centers in the ocean. This reduces the cost of cooling them to a large extent. Cloud servers handle a lot of data and computations. As a circumstance, they need continuous monitoring and supervision. If any technical glitch occurs on the server, then a lot of users face its consequences, which results in loss of time, data and money to both users and service providers. Technical faults are also sometimes caused if the consumer, especially the big organizations does not implement it properly. This not only costs them unnecessary overhead, but also the servers to handle vague data and

process them, which may again result in some technical faults in the servers.

Cloud computing has served as a boon to the mankind. Users can store the data in the cloud and access it anytime and anywhere, but accessing them requires the Internet connectivity. In order to access large amounts of data, good internet connectivity is required, which is not same at every part of the world. Therefore, various places are refraining from using the cloud services. Sometimes, the users and organizations tend to change the service providers due to a lot of issues. Therefore, ensuring resource portability is very necessary. Cloud technology must have the capability to transfer and integrate resources on other servers, without any necessary overhead. If a user deploys an application on a server, then migrating it to the server of another service provider requires the user to modify the application according to the requirement of new server. Even the user cannot share resources between the servers of different service providers.

Conclusion:

Cloud computing has opened the gates for large storage and computational power at a very minimal cost. Consumers don't need to buy expensive resources to carry on their daily jobs. But, in spite of having a lot of pros, the cloud computing also has a significant number of cons. These issues have always been prevalent in the field of cloud computing. Various attempts are being made to reduce these challenges to a certain level by the people of different domains. Despite of facing these challenges, cloud computing is still helping the technology to

reach to the people at all the remote places across the globe.

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Cloud Computing Models and Scalability

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Huge data centres with enormous data are present in recent times. Cloud computing is a technology that offers way to use the data which is in cloud storage. Clients can demand for the cloud service and using 'pay-per-use' method they can make use of it. The cloud service provider serves this to the cloud users (clients). In short, cloud computing is a process which allows us to store, manage and compute/analyse the data. Cloud provides various services and resources for the user's convenience and the user will have access to the data in the cloud by using the Internet connection. In this article, we will discuss some of the cloud deployment models.

Introduction

More data are generated day by day and it would continue to increase further but not decrease this kind of large datasets is known as big data. The computations performed with these data is cloud computing .Cloud is a storage of data which provides various facilities like backup, data sharing and resource service. These computations help the industries and organizations to take better decisions. All companies like Amazon, Google have their methods of data storage. And in this world there are numerous cloud service providers which ensure cloud computing as a one of the most growth oriented fields in IT industry. A news from "THE ECONOMIC TIMES" on November 23, 2018 reports that "India to see over 1 million cloud computing job roles by 2022". As all the companies shift to their own cloud infrastructures there will be a lot of job vacancies. In 2022, many job opportunities for cloud architect and cloud software engineer.

Cloud Computing

According to NIST "Cloud computing is a prototypical for enabling universal, appropriate, Network access which is on-demand to a shared pool of configurable computing resources that can be quickly providing and issuing with low effort of management skill or Service provider
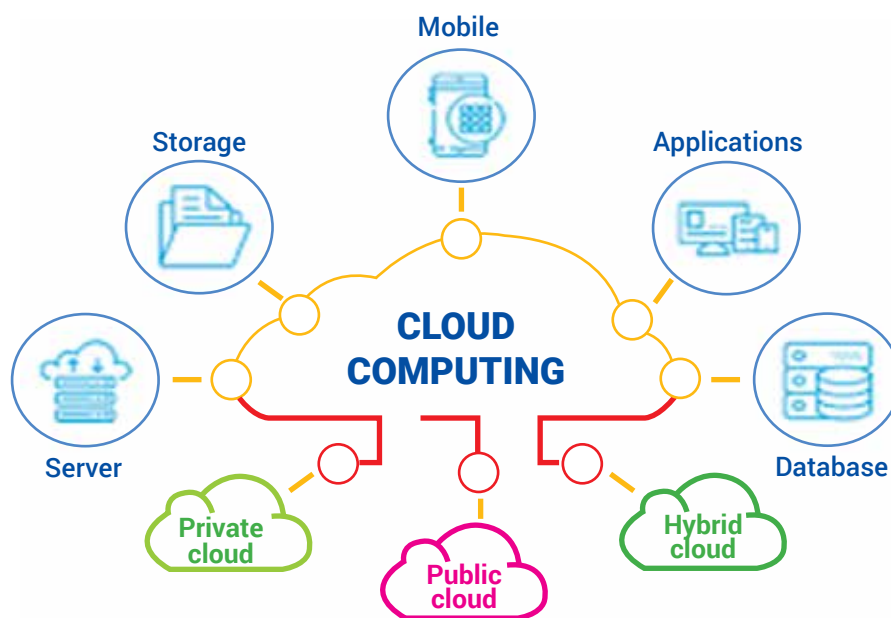
Fig. 1 : Cloud Computing

interaction."

Cloud Deployment Models

Public cloud

Most commonly used cloud is public cloud. The third party cloud service provider owns cloud resource and delivers it to the internet. The cloud provider manages the hardware and software .The web browser is the way of access to the accounts. Public cloud deployments are frequently used in most development environment particularly for office applications. The best example is Microsoft azure.

Fig. 2 : Public Cloud

Private cloud

A Private cloud differs from public cloud such that which can be used only by particular organizations. Private cloud is hosted either by a third-party service provider on-site data centre in the organization. The hardware, software and the network are allocated particularly for the cloud services. Usually the private cloud is used by government organizations and other large scale industries.
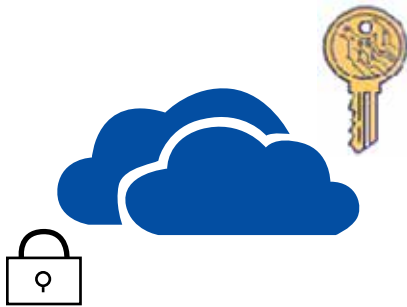
Fig. 3 : Private Cloud

Hybrid cloud

Hybrid cloud combines the infrastructure of both private and public cloud so that it is more beneficiary for organizations. Data and services can be accessed via both private and public cloud which provides more flexibility.

Fig. 4 : Hybrid Cloud

Fig. 6 : Horizontal Scalability

Cloud Scalability

Scalability is an infrastructure which is a dynamic provision which supports to handle load. In simple words scalability is a tool which handles the load by supporting all sizes and types. For e.g. : If a web application is popular, there will be more demand on its product and it's web application too. So, it should handle the traffic. By using the scalability property this can be achieved and the load is decreased.

Scalability is done in two ways:
- Horizontal Scalability
- Vertical Scalability

I.   Horizontal Scalability

Horizontal Scalability is a provision in which along with the existing resources multiple resources either hardware or software can be added which can be seen as a single logical unit. Some of the resources such as servers can be connected.
Example:

While hosting a web page, if there is no traffic as there are many users adding more servers will increase the speed. But all these servers will perform the same task. This process is also called as Scaling out.

II.   Vertical Scalability

Vertical Scalability is a provision in which along with existing hardware more resources can be added. In the same server/network we can add more resources.
Example:

For performing any task, if the processing power is less, then any hardware, servers can be added to it to increase its processing power. To perform a single task multiple resources is added. This form of scalability is called as Scaling up or Scaling in.

Fig. 6 : Horizontal Scalability

Conclusion

Cloud computing is a promising technology which provides storage and access to our data. The security provides by the cloud compared to the local servers is its ultimatum. The scalability of cloud to reduce traffic is an important aspect to be noted. Cloud cryptography is a way to ensure security. These Topics are going to be major research topics of cloud in future. In this article, some of the services and deployment models are also explained. Thus this article provides general idea about cloud computing as well its future researches.

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| A REPORT |

CSI President's address at Sri Aurobindo Inst. of Technology, Indore

A Student Branch of Computer Society of India

Reported by **Mr. Rashid Sheikh**, Associate Professor (CSE), Sri Aurobindo Institute of Technology, SAIMS Campus, Indore-Ujjain Highway, Indore - 453 111

The President of Computer Society of India Prof. A K Nayak visited the CSI Student Branch at Sri Aurobindo Institute of Technology, Indore while his visit was to Indore in connection with to attend the Regional Meeting of Region-III of CSI comprising the states of Madhya Pradesh, Gujarat and Rajasthan.

Prof. A K Nayak addressed to the CSI student members along with all faculties of the Sri Aurobindo Institute of Technology and office bearers of chapters and student coordinators of CSI belongs to the three state of Region-III. In his address, Prof. A K Nayak discussed about the emerging technologies in the field of ICT and their respective trends for future development. He discussed about the opportunities in the emerging technologies like embedded computing, cloud computing, quantum computing, nano computing, social computing, smart computing, IoT, IoE along with artificial intelligence, business intelligence, computational intelligence and emotional intelligence. He has also motivated and encouraged the student community to grab the opportunities created due to the emergence of these technologies. Prof. Nayak also highlighted the benefits of becoming CSI member and student members for shaping their future career to become a successful professional.

On this occasion, the Regional Vice President of CSI of Region-III Mr. Jayant Bhide addressed the gathering and motivated the students for building their future career. In his presidential address Dr. Durgesh Kumar Mishra, the Professor and Director of the institute said the student members of CSI at Indore can get the opportunity to interact with TCS employees for their help and guidance in their professional development.

The meeting was coordinated by Mr. Rashid Sheikh, Head Dept. of Computer Science and Engineering of Sri Aurobindo Institute of Technology.

The program was attended by all the dignitaries mentioned below:

Dr. B. S. Deora, Chairman, Udaipur, Dr. Dinesh Sukhwal, Secretary, Udaipur, Dr. Ashwin Doboriya, Treasurer, Rajasthan, Mr. Jignesh Doshi, Member Surat, Dr. Anand Sharma, Secretary, Mr. Saibat Bhomik, Chairman, Baroda Chapter, Dr. Mamta Padole RSC, Dr. Brijesh Jajal, Mr. Niraj Shah, Ahemdabad, Mr. Ankit Bhawsar, Ahemdabad, Dr. Jitendra Kulkarni Secratory Jabalpur, Mr. Vipin Dhagat.

Cloud Computing: A Complete Study

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*"If someone asks me what cloud computing is, I try not to get bogged down with definitions.
I tell them that, simply put, cloud computing is a better way to run your business."*

*- **Marc Benioff,** CEO of Salesforce.com*

Introduction

Early before Cloud Computing was introduced Information Technology tasks were laborious. Cloud Computing is a platform that provides access to the resources used for computing over the internet. The cloud computing platform provides services where anyone can use as much computing resources we require whenever and wherever we want.Cloud computing is used by almost all the IT sector companies as said in [1].

Let us imagine a situation where we have to prepare a list of requirements to start a business. The list goes like hardware, software, servers, power, storage capacity and infrastructure manageability and so on. It is alright to buy all these for a few in numbers. But what if this is not enough and we need more. It is very expensive to buy all the resources that are needed.This is where cloud comes into action.

Regardless of what we start with, it is common that a question arises 'why'. Anyway the answer for 'why cloud computing' is very simple. The cloud computing services follow 'use and pay' practice where you pay only for the resources that you use. This major feature of cost reduction makes it highly popular. They also include a number of benefits that makes it more special. The cloud computing can be branched based on the services and types of computing methodology.

Architecture

The architecture is the simple integration of many cloud parts as explained in [2]. It can be broken into Front End and Back End.

Front End

The Front End is the automatic data processing system for clients. It consists of
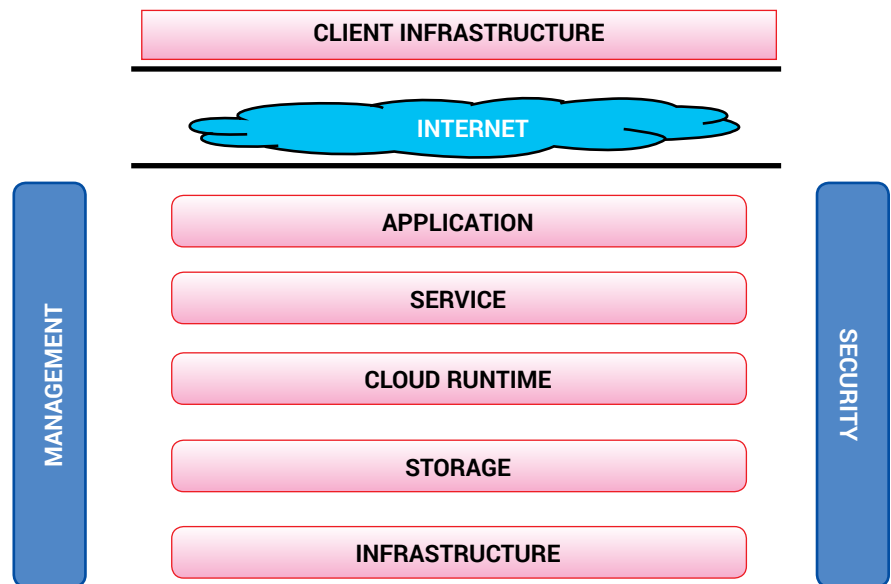
Fig. 1: Cloud Computing Architecture

applications that are in demand to access the platforms. One good example is a Web Browser.

Back End

The Fig. 1 shows the graphical representation of cloud computing architecture.

This end represents the cloud that has almost all resources to supply the required services. It consists of storage information, machines, security modes, services, models, servers and others.

Types of Cloud Computing

The clouds used are not similar each type is applied to solve some specific issue. According to [3], there are distinct methods to employ cloud services are Public model,

Private model and Hybrid model.

1. Public Model

Public Cloud as pictured in Figure 2 permits the accessibility of computing systems and its services to customers. A number of samples of those corporations which give public cloud facilities are IBM, Google, Amazon, Microsoft etc. This class of cloud service is open sourced. According to a technical perception, there hardly lie a few distinctions between private clouds and public clouds. In addition to that the safety level depends on the service suppliers and therefore a variety of cloud shopper's use. It is the top match for business functions. This sort of cloud is economical since there is a decrease in capital expenses.

PROS

- **Reliability**

  This type of cloud is highly reliable since, if any of the resources fails, public cloud will use another one.

- **High Flexibility**

  It provides the customers a versatile approach by linking with the personal cloud.

- **Location Independence**

  They guarantee the location independence by providing the services everywhere.

- **Utility vogue cost accounting**

  Since the 'pay and use' strategy is employed the overall cost is very less.

CONS

- **Low Security**

  In this model, the resources are shared in public which doesn't agree to higher level of security.

- **Less Customizable**

  It is a custom based model than non-public cloud.
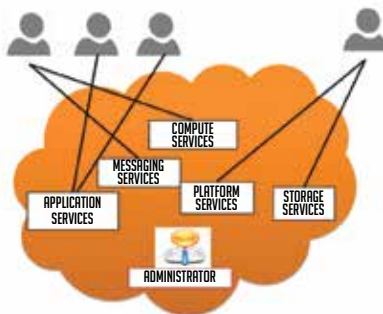
Fig. 2 : Public Cloud Model

2. Private Model

A private cloud in accordance with [4] contains the resources that belong to only one business organisation as in Figure 3. The personal cloud may be physically set at your organisation's on-site data center or it may be hosted by a third-party service supplier. Moreover in a personal cloud, the services and infrastructure are completely under the control of a non-public network and therefore the full credit is taken by the organization. In this manner, it is easier for any organisation to customize resources to fulfil their expectations. Almost all huge organizations utilize this model seeking for increased management.

PROS

- **More flexibility**

  They provide more flexibility to fulfil specific business wants.

- **Improved security**

  Unlike public model, here the resources aren't open, thus the management and security attained are higher.

- **High measurability**

  They afford great scalability.

CONS

- **Restricted space of Operation**

  This can be used only in lesser range and hard to deploy globally.

- **High Priced**

  Purchasing new hardware could be highly expensive.
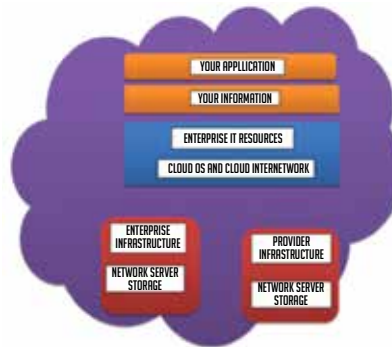
Fig. 3 : Private Cloud Model

- **Additional Skills**

  To deal with cloud one must be highly experienced and skilled.

3. Hybridmodel

Often referred to as "the better of each world," hybrid cloud models are heterogeneous in nature. They are a mixture of private and public cloud model. By implementing such a cloud will cover the positive areas of both the clouds. Hybrid cloud as in Figure 4 knowledge on the applications with the clouds for more flexibility.
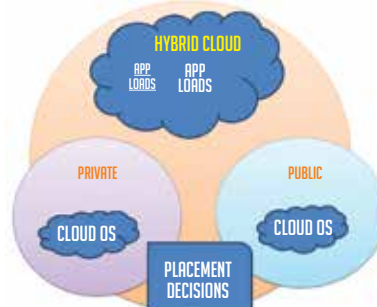
Fig. 4: Hybrid Cloud Model

With an example we will learn to use public cloud for high-volume and also the non-public cloud for sensitive business functions. Cloud bursting is another factor to be taken into consideration with hybrid model.

PROS

- **Control**

  The complete control will be under the organizations hand.

- **Flexibility**

  Since we are combining the models there is possibility to attain extra flexibility.

- **Cost-effectiveness**

  The cost is as usual less because we acquire the resources only when required.

- **Ease**

  It is comfortable to work with and does not require a great transition to change.

CONS

- **Networking problems**

  Networking becomes advanced because of presence of personal and public cloud.

- **Security Compliance**

  The organizations should seek for security while handling sensitive data.

- **Infrastructure Dependency:**

  This model depends highly on IT infrastructure. Thus it is essential to make redundancy over the datacenters.

Types of Cloud Services

The cloud services in other words can be termed as cloud computing stack because they are built on top of one another. The categories of services of cloud computing are:

(a) Infrastructure as a Service (IaaS)

The prime category of cloud computing service is IaaS. With this, one can hire the basic infrastructural needs such as servers to service a network, memory to store information, operating systems to supervise the resource from cloud providers.

(b) Platform as a Service(PaaS)

PaaS indicates the services that provide high demand circumstances for expanding, testing, transporting and monitoring the applications in software. This comforts the developers by making their jobs ready and effortless.

(c) Software as a Service (SaaS)

This approach is used to distribute the software applications over the network. With this the cloud providers perform all the

required operations. The client is connected to the application via internet, by using any computing system.

(d)   Serverless computing

Serverless computing highlights on application developing process without killing time for managing the infrastructure. This architecture is immensely expandable and event driven.

Benefits of Cloud Computing

Cloud computing takes a deviation from the regular way business people are thinking on the subject of IT needs. It boasts various features for businesses and end users. The features of this include

▪ It removes the cost of purchasing the essential computing requirements. The clients pay only for the resources and workloads they use.

▪ They have the potential to scale highly. The demanded resources are supplied in precise quantity at the perfect time.

▪ The on-site datacenters generally require numerous racking- hardware, software, power and servers. The IT teams can concentrate on achieving their by   company goals without performing the above tasks.

▪ It allows ease to backup and recover the data and in addition to that it also Increases the storage capacity.

▪ Cloud computing is highly secured to use and provides more flexibility and less maintenance problems.

Issues in Cloud Computing

However cloud computing is employed in companies still there remains a few challenges as detailed in [5].

▪ To download the files from the cloud and the access the services, it require a high quality internet connection and a good bandwidth.

▪ The chances for service outage are more which might lead to business downtime. It becomes a herculean task to pay for the loss due to downtime.

▪ There is a restriction for the control to the infrastructure as someone else is the owner of the cloud.

▪ It is a great hardship and a complex task to migrate or shift to any other service provider.

▪ In cloud computing all the operations are performed online which leave the inherent vulnerabilities unshielded.

Some Cloud Service Providers

Cloud computing can be utilized to provide various types of services. These services include machine learning, data analytics, streaming media, data storage and backup, creating different applications, automating software delivery and so on. The representation of Figure 5 shows some top Cloud Computing platforms as reported by [6].

1.   AWS

The Amazon Web Services [7] were the first to launch the cloud model in 2006. They stand number one in the cloud computing market. Nearly 70% of the whole cloud computing market is residing on AWS.

It has to deliver its services to 18 regions. The billings are done per hour and the pricing differs for every geographical region. Savings up to 90% are provided for reserved instances. Companies like NETFLIX, AMAZON, ADOBE and KELLOGG'S believe that AWS is very safe for them to use it.

2.   Google Cloud

Google launched its cloud computing platform nearly 11 years ago in 2008. GCP is chosen for its long term experience, global availability, ease to use and the various services it offers.

The services of GCP include computing, data storage, data analytics and machine learning. They are known for their global scale. The GCP is now available in 20 regions. While considering the cost factor, GCP provides services at a lower rate comparing to AWS.

3.   AZURE

Azure is a widely used cloud computing platform to access the resources and services that are offered by Microsoft. It was launched in 2010 and it is almost rival to AWS. They are the fastest growing and the second largest in the market.

TABLE 1: Cloud Computing Platforms

Name	Year	Major Services	Pros	Cons
Amazon Web Services	2006	Analytics, Database, Networking, Storage and so on	Easy to use. Highly flexible. Global presence. Low cost IT.	Technical fee issue. security limitations. Instance controls are limited.
Google Cloud	2008	Data Storage/ Retrieval, Data analytics, Machine learning and Computing etc.	Better Pricing and experience. Less downtime.	Connection issues. Security problems.
Microsoft Azure	2010	Application development, Testing, Collecting and storing metrics etc.	More reliable while using Microsoft tools. Supports hybrid cloud.	Inability to upload custom Images. Poor GUI management and tools.
IBM Cloud	2008	Storage computing, Analytics and others.	Robust business systems, Managing connections is easy.	Loss of control on data. Privacy issues. Dependencies on network providers.

Microsoft Azure

About 80% of the companies use Microsoft Azure. They have datacenters in 42 regions around the world and they do support various programming languages. Azure can be used for creating virtual machines, integrating features, application development and testing collecting and storing metrics and on and on.

4.   IBM Cloud

IBM Cloud computing was launched in the year 2008 by International Business Machines Corporation. This platform guides the workers to build and run modern apps and services. It provides direct access and services to launch.

With services over mobile, Internet of things, IBM Watson and more. There is no need to compromise in the security, privacy or any risks. In addition to that it enables companies to scale up to large heights and adapt swiftly to changing business needs.

Conclusion

Lastly, Cloud Computing is a swiftly developing technology that most of the organizations are taking up to enable their digital transformation. They can be divided into two, based on the types of computing models and based on the types of service they offer. The features of cloud computing have been discovered by all business owners, from start-ups to well popular organizations, and they have already started using cloud computing. Though there lie a few disadvantages of this platform. The cost limiting point brings into notice to all IT sectors to take them.

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Benefits for CSI members: Knowledge Sharing and Networking

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- Delivering Guest lecturers in educational institutes associated with CSI
- Voting in CSI elections
- Becoming part of CSI management committee

An Indispensable Emerging Technology to Every One - Cloud Computing

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1. Introduction

Over the decades, IT (Information Technology) is getting streamlined and venturing up to a new perspective of the technology era. The fast and steady growing technologies enhance the quality of life. Now a day we can't see a single person without hand held computing, communication devices such as PDA or mobile phones, etc., which are mandatory to the modern sophisticated world. At the same time the devices they owned does not have that much computational and storing capacity of their data. Since that users' huge amount of data have to be collected and stored remotely without using any local server or personal computer hard disk it meant for the data is to be stored, managed and processed on the internet. Fig.1.Shows the architecture of Cloud Computing Technologies.

2. Relationship between Cloud and Customer

Cloud computing is the on demand expediency of using computer resources, particularly storing information and computing power, without directly accessing by the user. In general which calls it as common data centers offers data, manipulate features, (i.e.) different services to all the internet users with certain accessibility permission. The data is processed away from users and processed over the huge computers connected together; call it as clusters perform the computational tasks in a cyberspace environment. Cloud computing comprises big data servers, virtual desktops, software platforms, various applications and different hierarchy of storage devices. Cloud computing is generally differentiated from traditional hosting services. Traditional hosting services equipped with the internet

Applications Interface

SMI Broker

| SLA Life Cycle | SMI Attribute Listener | Ranking System |

Monitoring Services

| Quatitative Measure | Quantitative Measures | Service selection |

Service Available Catalogue
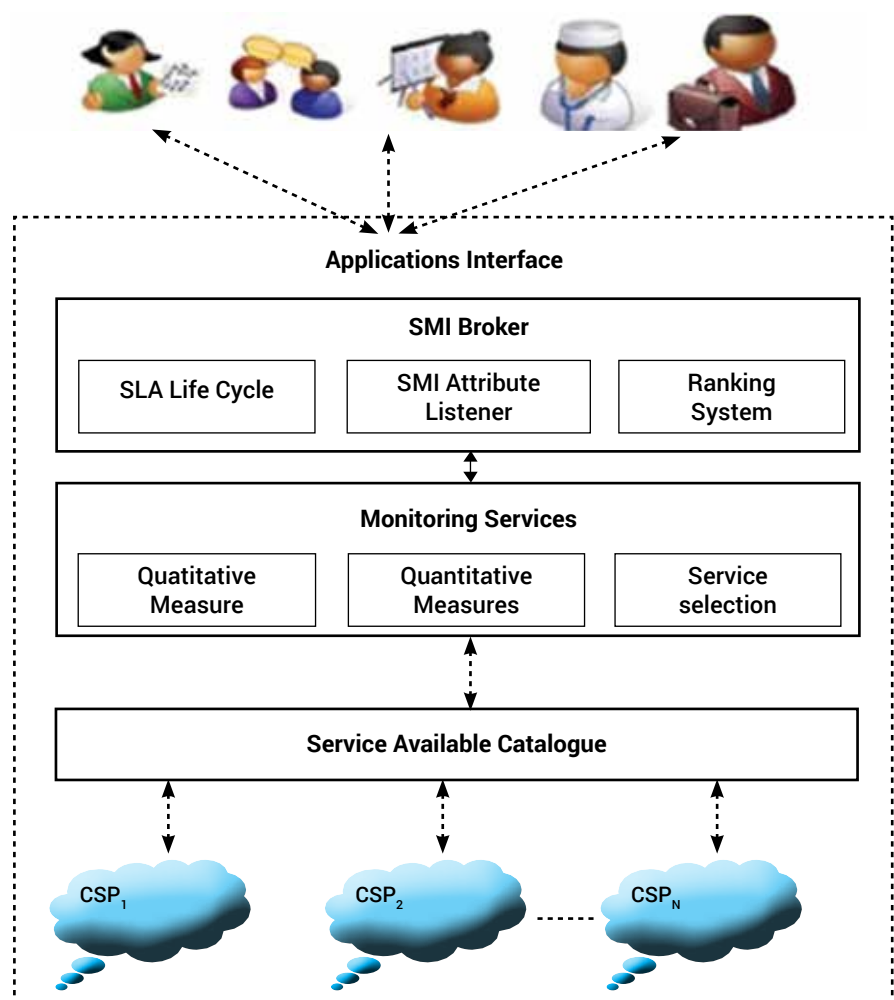
CSP_1 CSP_2 CSP_N

Fig.1 : Architecture of Cloud

between end users atmosphere and information or data. But cloud computing involves extra categories for enhanced services such as IT infrastructure, services and Information bundled as one end and another end is the customer edge between the foresaid ends internet play a vital role to provide the service is shown in Fig. 2.
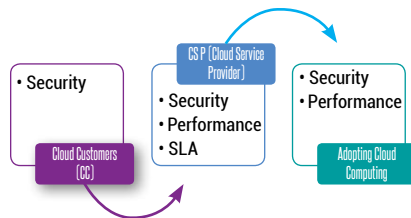
Fig. 2 : Relationship between Cloud and Customer

3. Components of Cloud Computing System

The cloud computing system equipped with four important components is shown in Fig.3 such as storage (database), control nodes, application servers, client computer, and computer network. The computer network connects all the storage, control nodes, client computer, and application servers.

Every one of these components play vital role to run the cloud computing system properly. Storage is again an essential element of the any computing system. Since that storage do store the information remotely according to the user needs instead of store the information locally. Internet is the backbone to interface between the cloud computing storage and the user local device. The device might be anyone of the computing devices such as PC Laptop or smart phone etc. In specific a subscribed user send and store the copy of the data to the server through internet, the server records the copy of the files which is later accessed or retrieved by the user through the web based interface. The main interface with user has with control nodes they decides the operation based on the users inputs.

4. Categories of Cloud Computing

Cloud computing types consist of three main services depicted in Fig.4 such as Software as a Service (SaaS) deals licensed software application to customers. The second one is Infrastructure as a service (IaaS) provides platform for execution of services and storage through to the customers through internet as on demand service. Third one is Platform as a Service (PaaS) is a frame work provides to the customers for execute relevant applications through the internet.

Cloud services are classified as public, private and hybrid. Over the Internet the services to the users as a paid service is public cloud, restricted to the private group or the people is called private cloud service. Hybrid cloud comprises both the services to the intended group of people or to the public as per service request. Data storage, retrieval and backup, analysis of data, creation and testing of applications, audio and video streaming, and providing software on
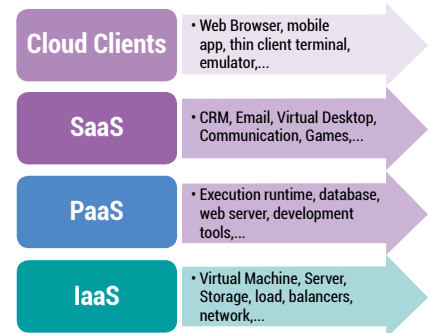
Fig. 4 : Categories of Cloud Computing

request are some of the services under the umbrella of cloud computing services

4.1 Hybrid Cloud

Today, hybrid cloud is adopted for enhancing the single cloud by managing the reliability, trust and security of the cloud to be distributed among multiple cloud providers. This distribution reduces the switching cost to various cloud providers and exhibits better fault tolerance. Hence, the storage load can be dispersed among several providers.

Hybrid cloud uses two or more clouds to lessen the risk of service unavailability, data corruption, vender lock-in, and privacy loss. The service unavailability can occur due to breakdown of hardware, software or system infrastructure. A hybrid cloud strategy improves overall enterprise performance by employing various infrastructures to satisfy the requirements of the customers

4.2. Security in Cloud

Cloud security is very much important because open access and control over the remote location. Users completely depends on the remote servers so all the data's and applications need to be very secure in cloud servers, so cloud servers are playing vital role in protection and access control. Further, cloud security consists of policies, technologies and controls to protect the data, applications and infrastructure of cloud computing which prevents the failures of service and which prevents the failures of service and provides trust to the customers.

4.3 Service Level Agreement (SLA) in Cloud

A SLA is consent between the service providers and user, which represents offers of the cloud which includes the resource details and performances. The essential metrics of SLA comprise CPU speed, size of memory and storage, network bandwidth, system uptime, and packet loss. Service
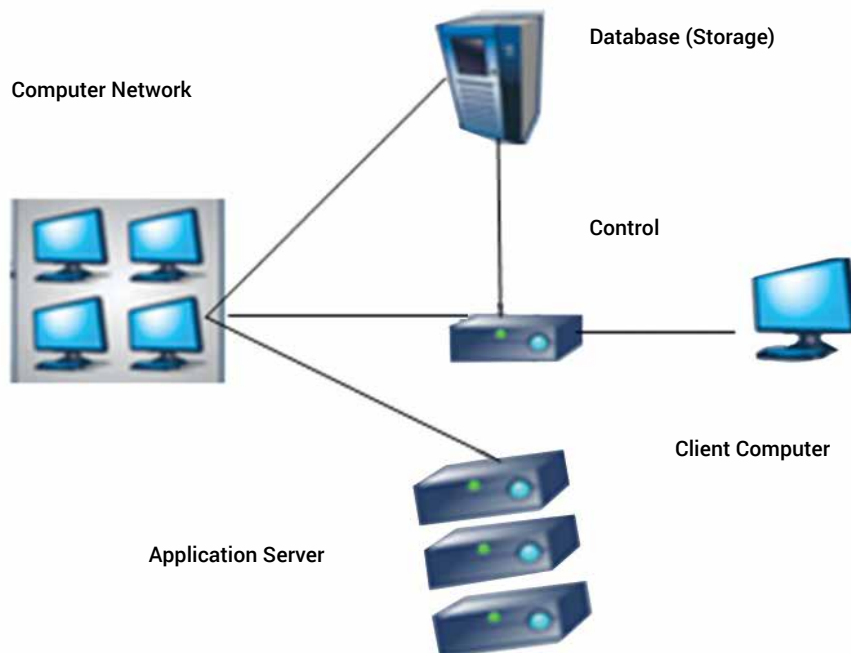
Fig. 3 : Components

level agreements provide the template with a specification of ensuring the quality characteristics of services to be provided by the service provider. In Fig.5 represents the features which can be enrich the cloud depends upon the user need.

5. Conclusion

A benefit of the cloud computing faster, secure and low cost, especially maintaining data and keeping transparent to the employees and providing infrastructure is very much cost effective. Deploying numbers of servers over cloud is easy as to access compute and to store the data. With the cloud in a single click can manipulate our application any part of the world physical locations. That is the cloud computing provide fast and reliable experience to the customer with low cost. Everyone can scale their business based on the demand of needs through the cloud computing instead of owning and maintaining the infrastructure.

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Leveraging Cloud Platform for Big Data- A Technical Analysis

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Introduction

Cloud Platform and Big Data are two prevalent technologies which when bundled together can provide great benefits to perform data computation. Big data deals with large scale of heterogeneous data exponentially growing whereas Cloud provides access to various services for processing the data. Because of the ubiquitous availability of Cloud system and Big Data technologies, enterprises are adapting them in a big way. IT industry has leveraged these technologies to provide cost effective solutions in short timelines. Cloud Computing provides infrastructure support for storing and processing data with scalability, accessibility and fault tolerance. Cloud computing complements Big Data in multiple ways as enlisted below.

- **Elasticity-** A cloud platform can be expanded to provide more storage for increased data. Thus Cloud creates a path for Big data to be available.
- **Data Processing –**Very high volume of data can be processed without worrying about underlying hardware. Cloud provides IaaS options that are needed for deploying Big Data platform for enterprise data analysis in an economical way.
- **Cost Cutting -** Cloud computing reduces the initial set up cost (Capex) for the industry.
- **Reduced Complexity -** To handle Big Data solutions, many components are necessary. Cloud platform provides all the required components as a service and thereby accelerating the delivery of complex Big Data solutions in a timely manner.

Depicted below is the synergy between Cloud and Big data for delivering enterprise solutions.

Synergies between Cloud & Big Data

Big Data is nothing but large collection of structured and unstructured data that grows exponentially over time. Ingestion & Processing of this data requires multiple servers which can be scaled quickly on a need basis. Such setup is required in order to collect a high volume of data, with significant variety and velocity.

Cloud platforms already provide this sort of an environment for computation. Big Data solutions can make use of these cloud platforms to store data and perform analytics effectively. Aspects like scaling, availability, security and metering of cloud property are taken care of by the respective cloud providers and it allows the developers working on Big Data solutions to focus on important aspects. Cloud & IaaS enables enterprises to reduce the upfront hardware & software investments which are required to build a Big Data platfom; it allows enterprises to experiment & fail-fast when building a next gen Big Data platform. Other advantages of Cloud and Big data integration are listed in Fig. 2

Fig. 2: Benefits of Big data in Cloud

Big Data frameworksfor the Cloud

Big Data frameworks are used to accelerate delivery of Big Data solutions for enterprises while reducing the number of issues & challenges that crop-up in the process. These frameworks support multiple phases of the data lifecycle like ingestion, storage, analysis and processing of the
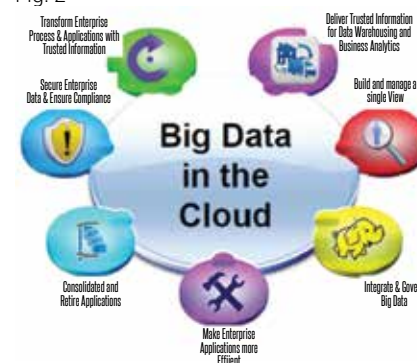

Fig. 1 : Big data and Cloud computing Relationship Model

large and distributed data.Some of the most popular Big Data frameworks in use are -

- **Hadoop :** It is a framework used to store and process massive data sets on a cluster of cheap machines in a distributed manner.Hence by integrating Cloud and Big Data, the cloud platform takes the role of the third party that provides services to the framework.

- **Spark :** It is a software framework used for fast data processing and in-depth analysis of data in a distributed computing system.One of the most important characteristic of cloud is to be accessible and available at all times, which can be achieved by fast processing and replying to the requests of the end users on time

- **Hive :** It is a data warehousing component that performs operations like managing, reading, writing large amount of data in an environment like SQL. Hence it can be termed as a framework used for data querying and batch processing.

- **Storm :** It is used for reliable processing of streams of data that have a start but no definite end (unbound stream of data). In cloud platform, since there is a continuous inflow and outflow of data or resources by various entities, there should be a presence of some component or framework which would process such unbound data stream. Use of Apache storm with cloud platform ensures in processing of such unbound stream of data.

Impediments while leveraging Cloud for Big Data

- Security is a major problem when Cloud is used for Big Data solutions. Big Data as it deals with large volumes of proprietary & protected data. When this data is taken out of the enterprise and used in the Cloud, a completely new set of security tools will be required to protect from hacking. To support Big Data, the Cloud platforms will need to develop new security tools & frameworks. This is considered to be an important risk factor while leveraging Cloud for Big Data [3].

- In Cloud platforms, data gets stored at different locations. With regulations like GDPR being in place, strong control over where data is stored & used is required. A proper governance & regulatory mechanism has to be put in place for Big Data solutions that leverage cloud platforms.

Conclusion

The advances in cloud technologies and Big Data framework make it very easy for even small enterprises to implement Big Data solutions and derive valuable insights from the data that they hold. The synergies that exist between the two technologies is a game-changer for the IT industry in providing cost effective, timely & reliable solutions for different categories of customers.

In a Digital World, cloud has become the preferred choice of enterprises to reach their customers. The data related to customer behavior and patterns are again captured in cloud storage environment and analyzed to derive insights about the customer. This becomes a virtuous cycle to acquire more & more of customer data. With ever increasing volume of data, enterprises that leverage the power of Cloud to deliver Big Data Analytics will gain significant competitive advantages over those that don't.

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IoT Enabled Trans-disciplinary Research using ThinkSpeak Cloud

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Thing Speak is an IoT analytics platform service that allows aggregating, visualizing, and analysing live data streams in the cloud. Thing Speak enables engineers and scientists to prototype and build IoT systems without setting up servers or developing web software. In this research article, presenting four different trans-disciplinary research work's in the fields of Roads and Transportation, Healthcare, Municipality, Home appliances and Education.

Firstly, Internet of Things (IoT) enabled automatic detection and remote monitoring the overload of the vehicles. In this research, embedding of the sensor under the vehicles, which has capable of sensing the weight of the load inside the vehicles, that which can store in the cloud platform to send the local alert and global alert. Whenever the load inside the vehicles was more than the predefined weight/load alerts will be sent for safety travel. Secondly, a novel IoT enabled railway gate alerting system provides the safety measures likes automatic detection of train movement by using the alarm sounds besides the road till 2 KMs and SMS alert till the 2 KMs surroundings of the users. Thirdly, a novel IoT enabled multi-purpose chair will facilitate the users to control the home appliances locally and globally similarly, it detects the abnormal state of the health condition, of the users local and globally and finds the duration of the time that the person sitting on the chair for monitoring purpose. Fourth and final research work is the IoT enabled dustbin by placing the ultrasonic sensors, GPS sensor it is capable to know whether the dustbin is full or empty and the status will be indicated as local alert and global alert. The local alert will be the automatic lid closing of a dustbin and the global alert will be a SMS with the location of a dustbin and the status as full.

Keywords: Transportation, Healthcare, Home appliance, ThinkSpeak, Node MCU, GPS sensor

1. Internet of Things (IoT) Enabled Automatic Detection and Remote Monitoring the overload of the Vehicles

IOT (Internet of Things) was current technology which has vast application in almost every fields due to its IOT (Internet of Things) technology most of the works of the human beings became comfortable and easy due to this technology all the things/nonliving that exist in the world became smart/intelligent with this intelligence the things can be senses the environment and can process it and produce a output. The sensing can be done with the help of various sensors. The processing will be done based on micro controller /microprocessor. The output may be a actuators with the help this technology here the invention/idea was proposed and discussed. The idea is to detect the overload of the vehicles locally and globally/remotely. The figure1 shows the overall illustrations of the proposed idea. The figure 2 shows the illustrations to get the global alert message this idea will locally warn the driver that the vehicle was overloaded with this warning the driver should stop overloading, if not immediately the global alert will sent to the policemen/authorized person. The global alert consists of a message with the figure of the weight overloaded. The vehicle number and the GPS location of the vehicle with this idea every driver will travel with predefined load which leads to safe travelling of the user [3].

2. Internet of Things (IoT) enabled Railway Gate System for early detection of the movement of the Train

In everyday life the road travelling is essential for every individual particularly in the India. While crossing the railway tracks many accidents occurring due to the rash driving to cross the gate before getting closed/Unmanned Level Crossings. To fill this gap the invention will control the accidents. In the proposed invention railway tracks placing the alarms beside the roads
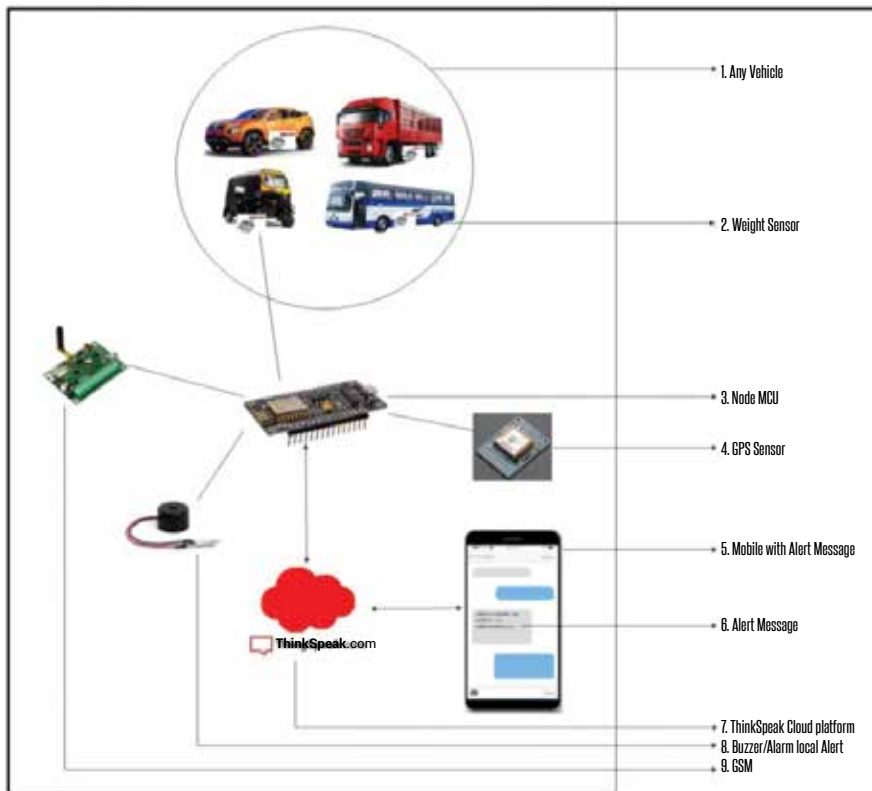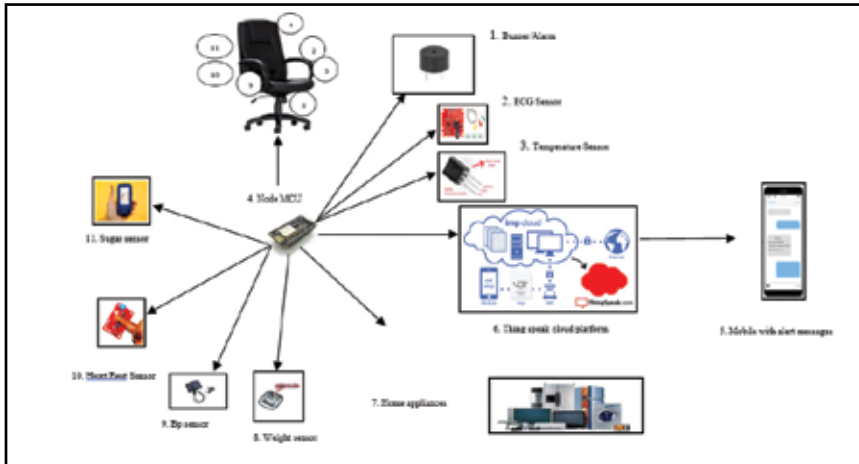
Fig. 3 : Internet of Things [IoT] enabled multipurpose chair
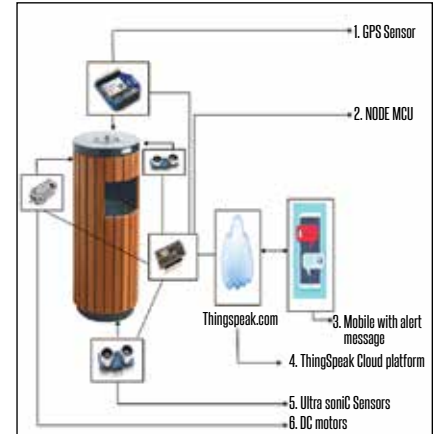
Fig. 4 : Internet of Things [IoT] enabled Dustbin Management System

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Dr. K. K. Baseer [CSI-I1182542] obtained his B.Tech and M.Tech degrees in CSE from JNTUH, Hyderabad and Ph.D. degree from JNTUA University, Ananthapuramu, India. At present working as an Associate Professor in department of Information Technology and Member in Data Analytics Research Center, Sree Vidyanikethan Engineering College, Tirupati, A.P., INDIA. He has published more than 45 research papers and articles in reputed National/ International journals and conferences including IEEE, ACM, Springer and Scopus. He also filed and published 08 patents under which 07 are under examination. His areas of interest include Cloud Computing, Data Science, Software Engineering, Software Architecture, Service Oriented Architecture, Internet of Plants (IoP) and other latest trends in technology. He has more than 11 years of experience in both teaching and industry in the area of Computer Science and Engineering. He is a member of IAENG, CSI, IEAE and IISCA. He recevied Research Excellence Award from Institute for Exploring Advances in Science & Engineering (IEAE) in 2018. He can be reached at baseer.kk@vidyanikethan.edu.

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Mr. T. Vikram Neerugatti is working as Assistant Professor at Sri Venkateswara College of Engineering and Technology, Chittoor and also he is pursuing his Ph.D. in the area of Internet of Things (IoT) at Sri Venkateswara University, Tirupati. He completed his B.Tech & M.Tech degree in CSE from JNTUA. He has M.S degree from Brain wells University, London, UK. He has more than 10 years teaching experience from various Institutions like NIT-Goa, Sree Vidyanikethan Engineering College, A. Rangampeta, SVU, Tirupati and SVCE, Chittoor. He has published 15+ National and International Conferences and Journals. He got 6 best research paper awards. Recently he got Dr. B.R. Ambedkar Research Fellowship award for his innovative research contributions. His research areas are Internet of Things, Fog Computing, Cloud Computing, etc. He is a life membership of IAENG, CSI, IEAE and IISCA. He can be reached at vikramneerugatti@gmail.com.

Computer Society of India™
Call for Nominations
For CSI Elections 2020-2021/2022

Dear CSI Members,

Under Byelaws(Section 5: Nominations and Elections) of the Computer Society of India, Nomination Committee hereby invites nominations from Voting Members for considering them for the various elective offices of the Executive Committee (ExecCom) and the Nomination Committee (NC) as well as Chapter Elections. Members are accordingly invited to submit the names of candidates who are valid Voting Members for the following elective offices:

For the Term 2020-2021 (April 1, 2020 – March 31, 2021)
1. Vice-President (President Elect)
2. Nomination Committee (3 members)

For the Term 2020-2022 (April 1, 2020 – March 31, 2022)
1. Hony. Secretary
2. Regional Vice-President (Region 2): Assam, Bihar, West Bengal, North Eastern States and other areas in East and North East area.
3. Regional Vice-President (Region 4): Jharkhand, Chattisgarh, Odisha and other areas in Central and South Eastern India.
4. Regional Vice-President (Region 6): Maharashtra and Goa.
5. Regional Vice-President (Region 8): International Members.
6. Divisional Chairperson (Division 2) - Software
7. Divisional Chairperson (Division 4) - Communications

Note: All nominees and their proposers must refer to the eligibility conditions for the respective posts as outlined in the CSI Constitution and Byelaws, available in official web site of CSI.

The proposal for Nomination, in prescribed format, should be accompanied by followings(which are also given in website www.csi-election.org / www.csi-india.org):
1. Signed letter/ E-mail from at least two valid voting members proposing the Nominee.
2. A signed letter/ E-mail from the Nominee confirming:
   2.1 Acceptance to stand for election to the nominated office.
   2.2 Willingness to devote adequate time for the Society's work.
   2.3 Commitment to attend at least three ExecCom Meetings in a year (Not for Nominees to NC).
3. Two Passport size Photographs (printed) (3.5 cm X 4.5 cm) or softcopy of 413 x531 pixels (300 dpi).
4. Statement of Intent on how the nominee intends to serve the Computer Society of India.
5. Bio-data in the prescribed format (please refer to formats for election).

Note 1. If the name of any Nominee appears for more than one Office, the Nomination Committee will be empowered to decide on the office for which he/she should contest. The NC will take into consideration any e-mail or signed written preferences submitted by the nominee received prior to the last date of nominations.

Note 2: Nominations will NOT be considered in the following cases:
   (a) Nominees with pending dues to CSI or
   (b) Nominees against whom Disciplinary action has been taken or
   (c) Nominees with pending issues with the Disciplinary Committee.

Note 3: The nominee should be a valid member as on 31st March 2022 except for NC Members which may be up to 31st Mar 2021.

Note 4: All election related notices will be published on the official website of CSI website Homepage i.e. www.csi-elections. org/ www.csi-india.org. The date of publishing election related notices on the CSI website homepage www.csi-elections.org / www.csi-india.orgwill be considered as the date of publication. As per Section 4.6.4, "The word mail includes e-mail and the word publication includes web publication".

The last date for receipt of nominations is 15th Nov. 2019 (05.00 pm)

The proposals must be sent to:

The Chairman
Nomination Committee (2019-20)
C/o Computer Society of India,
Samruddhi Venture Park, Unit No 3,
4th Floor, MIDC, Andheri (East), Mumbai–400 093
E-mail: nc2019-20@csi-india.org

With a copy to:

Mr Arvind Mohan Nayak
Chairman, Nomination Committee
(E-mail: amnayak@hotmail.com)
Mobile: +91 94280 07518

S. No.	Activity	Date
1	Start of Call for Nominations	15th Oct. 2019
2	Last Date for Receipt of Nominations	15th Nov. 2019 (05.00 pm)
3	Last Date for Withdrawal of Nominations	18th Nov. 2019 (05.00 pm)
4	Scrutiny and Finalization of Election Slate and its Communication to ExecCom	22nd Nov. 2019
5	Publication on CSI Election website with link of Bio-Data and Statement of Intent of Candidate	14th Dec. 2019
6	Email Posting of Login and Passwords to Members through Email	26th Dec. 2019
7	E-voting Starts (E-ballots)	01st Jan. 2020 (10.00 am)
8	E-voting Ends	31st Jan. 2020 (05.00 pm)
9	Declaration of Election Results on CSI Election Website & Communication to ExecCom by	04th Feb. 2020
10	Sending of Election Results to the Candidates & Registrar of Societies by	06th Feb. 2020

Note: The dates may be changed by the Nomination Committee, if required – by suitable announcement on the CSI Website home page www.csi-elections.org / www.csi-india.org

All members are requested to register/update their latest e-mail ids and mobile numbers well before the beginning of voting process by sending an email at nc2019-20@csi-india.org.

No change in email id or mobile would be permitted during the period of election.

Election Code of Conduct

Canvassing (both individually and in group) during the election period directly or indirectly through Post/Email/Social Media/SMS is not allowed/permitted. Action would be initiated against the members/non-members found involved in such an act of canvassing or otherwise, in accordance with latest version of information technology act of the Govt. of India.

For more details on Elections, please visit www.csi-elections.org / www.csi-india.org

Elections for CSI Chapters:

The Chapter Election process must be completed by the prescribed date as per Chapter Byelaws. If the chapter opts to go for e-voting with National ExecCom voting, all details of the Nominees must be sent to CSI HQ / National NC by 20th Nov. 2019.

Chapter Electionswill also be held for the following positions:

1. Vice Chairman (Chairman Elect) 2020-21
2. Nomination Committee (3 Members) 2020-21
3. Hony. Secretary (2020-21/22)
4. Managing Committee Members (2020-21) (Class A: 8, Class B: 6, Class C: 4) based on Chapter Membership.

Nomination Committee (2019-2020) CSI

Arvind Mohan Nayak	**Deepak Sharma**	**Dr. Ratnadeep Deshmukh**
Chaiman	Member	Member

Computer Society of India™
Call for Nominations
http://www.csi-elections.org
Format for Accepting Nomination

Date:___ / ___ / _____

From   :_____
(Name)   :_____
(CSI Membership No) :_____
(Address)   :_____
                _____
(City)   : _____
(Mobile/ Phone No.) : _____
Email   : _____

To
Chairman,
Nomination Committee (2019-20),
C/o. Computer Society of India,
Samruddhi Venture Park, MIDC, Andheri East,
Mumbai – 400093

Sub: CSI Elections 2020-2021/2022 Nomination for the Post : _____

Dear Sir,

This is with reference to CSI elections 2020-2021/2022

1. I wish to inform you that my name has been proposed by some responsible eligible voting member of CSI having Membership No._____ for the post of _____ for the term 2020-2021/2022.
2. My CSI membership no. is _____
3. My membership is valid upto (_____ date _____) OR I am a Life Member of CSI.
4. I submit my nomination for above post and stand for election to the nominated office.
5. I declare that I satisfy the eligibility requirements for the nominated office/post as specified in the CSI Constitution and byelaws.
6. I assure you that I will devote adequate time for the Society's work and attend at least 3 ExecCom meetings in a year. (Not for nominees of Nomination's Committee)
7. I declare that the information given above is true to the best of my knowledge and belief.
8. My photograph, bio-data and statement of intent are attached.

Thanking you,

Yours sincerely,

Signature of Nominee
Encl. : 1. Bio data with photograph and statement of intent in prescribed format.
         2. Signed letter/E-mail from at least 2 valid voting members in good standing proposing the Nominee.

Computer Society of India™

BIO DATA (format)

Post for which Nominated : _____

Date:___ / ___ / _____

1. Name : _____
2. CSI Membership No. : _____
3. Membership Type :   Life / Annual / Institutional
4. CSI Membership since : _____
5. E-mail address : _____
6. Date of Birth (Age) : _____
7. Postal Address : _____
8. Phone/ Mobile/ Fax Nos. : _____
9. Educational Qualification : _____
10. Publications – relevant to the office being contesting for : _____
11. Contribution to the IT profession: _____
12. Contribution made to CSI: _____
13. Experience - relevant to the position contesting for : _____
14. Honours/ Professional Recognition :_____
15. Other Relevant Information :_____
16. In case of Nominees who are holding or have held an Elected post in CSI ExecCom or
    NC in the last 3 years :
    a. Positions held
    b. Statements of Intent submitted for the above positions
    c. Results achieved/ action taken

Attach Photograph, Letter/Email of Nominee, Letter/Email of Proposer 1, and Letter/Email of Proposer 2

Signature of Nominee
Date :
Give information in brief.(last 3 years): _____

Computer Society of India™

Format for Proposer

(Proposal from eligible voting member proposing the nominee)

(Two proposers are required for a valid Nomination)

Date:___ / ___ / _____

From   : _____
(Name)   : _____
(CSI Membership No) : _____
(Address)   : _____
                                  _____
(City)   : _____
(Mobile/ Phone No.)   : _____
Email   : _____
To
Chairman,
Nomination Committee (2019-20),
C/o. Computer Society of India,
Samruddhi Venture Park, MIDC, Andheri East, Mumbai – 400093

Sub : Proposal for proposing the nominee : (name of the nominee) for CSI Elections 2020-2021/2022

Dear Sir,
This is with reference to CSI elections 2020-2021/2022
1. I propose Mr./Prof./Dr./Mrs./Ms. _____ having CSI Membership No.:_____as a
    candidate for the post of _____
2. I also certify that I have paid all my membership dues for the term of post for which I am proposing the candidate I have not nominated
    anyone else for the same post.
Thanking you,
Yours sincerely,

Signature
Name & CSI Membership Number of Proposer.

CSI President visit to TCS, Indore

Reported by **Dr. Durgesh Kumar Mishra**, Professor (CSE) and Director, Sri Aurobindo Institute of Technology, Indore, MP, India.

On 27th September, Region-III has organized a regional meeting of Region-III at Indore. Meeting was called by RVP-III Mr. Jayant Bhide. He did a great job to communicate all chapter office bearers, Regional Student coordinator and State Student coordinators of Region-III. Dr. A K Nayak, President CSI and Dr. Durgesh Mishra, Treasurer CSI also attended the meeting from HQ as special invitee.

Following members were present.

1. **Dr. B S Deora** - Chairman, Udaipur Chapter
2. **Dr. Dinesh Sukhwal**, Secretary, Udaipur Chapter
3. **Dr. Ashwin Doboriya**, Treasurer, Rajkot Chapter
4. **Mr. Jignesh Doshi**, Sr. Member, Surat Chapter
5. **Dr. Anand Sharma**, Secretary, Lakshman Garh Chapter
6. **Mr. Saibal Bhomik**, Chairman, Baroda Chapter
7. **Dr. Mamta Padole**, Regional Student Coordinator
8. **Dr. Brijesh Jajal**
9. **Mr. Niraj Shah**, Chairman, Ahmedabad Chapter
10. **Mr. Ankit Bhawsar**, Ahmedabad Chapter
11. **Dr. Jitendra Kulkarni**, Secretary Jabalpur Chapter
12. **Mr. Vipin Dhagat**, Chairman, Jabalpur Chapter
13. **Dr. Vijay Singh Rathor**, Past Chairman Jaipur Chapter

During this visit members got the opportunity to visit TCS Indore. In morning session all members were visited TCS campus. TCS head Mr. Amitabh Tiwari invited CSI President Dr. A K Nayak to address the TCS officials and executives. Dr. Durgesh Mishra did all coordination with TCS Indore as Dr. Mishra has already delivered his talk two times at TCS Indore for association of CSI with TCS.

Dr. A K Nayak address was based on title "**CSI: Past, Present and Future**" which was attended by around 400 TCS employees along with the CSI chapter office bearers and student coordinators of state of Madhya Pradesh, Gujarat and Rajasthan. The meeting was followed by lunch which was sponsored by TCS and TCS Head assured about the enrolment of good number of employees as the member of Computer Society of India.

President of CSI Prof. A K Nayak while addressing the employees & executives of TCS in TCS auditorium

The Hony. Treasurer of CSI, Dr. Durgesh Mishra addressing the gathering.

View of the gathering present during CSI President address

Head of TCS Mr. Amitabh Tiwari while felicitating the President of CSI

CSI Publications Editors Meeting

Date: 28.09.19

Venue: Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM),

A-4, PaschimVihar, Rohtak Road, New Delhi-110 063.

The following were present.

1. Prof. A. K. Nayak   President CSI & Publisher
2. Dr D. D. Sarma   Chairman, Publication Committee
3. Prof. S. K. Yadav   Hon. Secretary, CSI
4. Dr. R. R. Deshmukh   Editor-in-Chief, Jrl. of Computing
5. Dr. Ritika Wason   Editor, CSIC
6. Dr. Vishal Jain   Editor, Adyayan

Dr. S. S. Agarwal, Editor-in-Chief, CSIC could not attend the meeting at BVICAM. However, later he met the President and Chairman, PC. He was apprised of the deliberations held in the meeting and his suggestions and ideas were also taken and have been incorporated.

Dr. M. N, Hoda, and Dr. R. K.Vyas Vice-President (Special Invitees) could not attend as they had to attend a meeting of IETE.

Introduction:

With a view to frame the modalities for three prime publications of CSI (CSI Communications, CSI Journal of Computing and CSI Adhayan), a meeting of editors of CSI Publications was convened at Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM) on Saturday, 28th Sept,2019.

Dr D. D. Sarma Chairman, PC Committee welcomed the President, CSI and other esteemed members for this meeting. The agenda was taken up by Dr. Ritika Wason who introduced the agenda points at the request of the Chairman.

1. Prof. A. K. Nayak, President, CSI and Publisher CSI Publications, stated that the aim of all three publications of CSI. **CSI Communications** was meant to be the mouthpiece of CSI, which should focus on reporting all CSI Chapter and student branch activities and events as well enlightening readers regarding some monthly themes in a balanced manner on a monthly basis. **CSI Journal of Computing** was meant to be an exclusively academic journal that has had a glorious past and should now be brought into regular publication on a quarterly basis. **CSI Adhyanan** was meant to be a journal for showcasing the research skills of student members and should be rolled into regular publication again on a quarterly basis. His vision was to streamline all these publications of CSI.

In order to achieve the same, Chairman, CSI PC requested all members present at the meeting for their viewpoints and the following decisions were taken:

i. A Committee of reviewers should be framed for CSI Journal of Computing.

ii. All CSI Publications should be brought to the level of getting them indexed with prominent statutory bodies like UGC, Springer etc. Prof. S.K. Yadav, Hon. Secretary, CSI was requested to do the needful in this regard.

iii. New editors may be incorporated in CSI Journal of Computing and CSI Communications. Prof. D. D. Sarma proposed Dr. D.V. Ramana, Hyderabad to be added in Editorial Board for CSI Communications and Dr. M.G.P.L. Narayana, Vice-President and Chief Scientist (R), TCS and Dr. P. Srinivasa Rao, Professor and Principal, College of Engg., Andhra University, Visakhapatnam to be added as member of editorial board in CSI Journal of Computing.

It was also decided that CSI Journal of Computing shall contain 8 editorial board members which shall include two foreign experts also and CSI Communications shall contain 7 editorial boards members spanning from all regions of the country.

iv. CSI Student members shall be made free members of CSI portal which shall be integrated with MOOC portal under the guidance of Prof. S. K. Yadav, Hon. Secretary, CSI.

v. Further Prof. S. K. Yadav, would help in CSI getting worldwide recognition by promoting CSI partnership with different countries.

vi. Prof. D. D. Sarma, Chairman proposed introduction of new sections in CSI Communications like short communications/ letters to the Editor. He suggested CSI should encourage monographs on important themes from eminent persons and they be published under the auspice of CSI. It was pointed out that short communications concept has already been implemented as Invited article section in CSI Communications from August, 2019 with short communications from Prof. V. Rajaraman on History of Computing.

vii. It was also identified that a number of conferences are being

conducted under the aegis of CSI. However, publishers of such conferences are third party publishers. It was identified that there should be future efforts to bring such conferences under complete CSI flagship by further strengthening of CSI publications.

viii. Eminent academicians/scientists/Industrialists who wish to contribute monographs on any IT domain of interest shall also be encouraged.

ix. Strict quality check of publications accepted in CSI Journal of Computing shall be ensured. Only original research articles shall be considered and **review papers shall not be considered.** Each submitted article shall be subjected to three double-blind peer review before taking a final decision on the same. Repetitions/Plagiarism not exceeding 10% as per Turn it in report may be allowed.

x. All publications in all CSI publications shall be completely free of cost. However, for CSI Adhyayan the contributors shall be limited to CSI student members and in exceptional cases by dedicated faculty of repute.

CSI Journal of Computing

CSI Journal of Computing shall be headed by Prof. R. R. Deshmukh as Editor in Chief and Dr. Brojo Kishore Mishra and Dr. Mayank Aggarwal as Editors.

xi. For this Journal, at least one author should be a CSI member. In case, non-CSI members paper is selected they shall be motivated to join CSI as seasonal members for at least a period of one year. In case the author is an outstanding person of national/international repute; the publisher reserves the right to publish the paper as a special invited article.

xii. In due course of time, paper submissions to CSI Journal of Computing shall be automated ISSN Numbers and online availability

xiii. CSI should apply for new ISSN numbers for Adhyayan as well as Journal of Computing.. Prof. S. K. Yadav, Hon. Secretary, CSI was requested for this and has agreed to take up this responsibility.

xiv. Online availability of all CSI publications shall be disseminated widely. Online links of Journal of Computing, Communications as well as Adhyayan shall be dispersed to student coordinators immediately upon publication.

Adyayan

xv. CSI Adhyayan shall be headed by Dr. Vipin Tyagi as Editor-in-Chief and Dr. Vishal Jain as Editor

xvi. 50 hard copies of CSI Adhyayan as well as CSI Journal of Computing shall be printed with the aim of dispersal among national bodies and libraries of repute.

xvii. Dr. Vishal Jain proposed technical collaboration with conferences of repute to promote manuscript submission rate for CSI Journal of Computing.

CSI Communications

xviii. CSI Communications Dec. 2019 issue shall announce themes for first 6 months of 2020 in advance with a view to further increase the article submission rate.

The meeting proved to be a guiding factor in steering the CSI publications towards publications of national repute.

Dr Vishal Jain proposed a Vote of Thanks

Enclosures: Attendance sheet

Cambridge Assessment English

Reported by **Mr. Pradeep Rathi**, Regional Vice-President (Region 6) (Maharashtra & Goa) (2018-20)

Cambridge Assessment English (Cambridge). Part of the University of Cambridge, is in the business of helping millions of people learn English and prove their skills to the world. For Cambridge, learning English is more than just exams and grades. It's about having the confidence to communicate and access a lifetime of enriching experiences and opportunities.

Cambridge provides the world's leading range of qualifications and tests for learners and teachers of English. Globally-recognised by more than 20,000 leading universities, employers and governments, their research-based assessments are a mark of excellence that open doors.

Cambridge's work is supported around the world by a network of 2,800 exam centres, over 50,000 schools and tens of thousands of examiners, teachers, education experts and publishers. Now CSI and Cambridge have agreed to associate and work together in India to promote Lingua Skills and Business English within India and its member colleges. CSI and Cambridge working together, will inspire learners to go further.

☞ *Mr. Pradeep Rathi RVP-6 of CSI with Mr. Liam Vint, Deputy Director Global Network, Cambridge Assessment English, University of Cambridge, UK*

Eastern Regional Meet (Region-II)

Held at Indian Statistical Institute, Kolkata on 06.09.2019 at 04.00 pm

Minutes of the CSI Region-II Meeting at Kolkata

President Prof. Dr. A. K. Nayak, Vice President Dr. R. K. Vyas, RVP-II, Md. Shams Raza, Kolkata Chapter Chairman, Mr. Gautam Hajra, Guwahati Chapter Chairman, Mr. Shikhar Sharma, Fellow & Former RVP Dr. Dipti Prasad Mukherjee and SSC, OBs of Bihar, Kolkata & Patna Chapters

Eastern Regional Meet (Region-II) held at Kolkata on 6th September, 2019, has been attended by President Prof. (Dr.) A. K. Nayak, Vice President Dr. R. K. Vyas, RVP-II, Md. Shams Raza, Chapter Chairman Mr. Gautam Hajra, OBs & MC members of Kolkata Chapter, Mr. Shikhar Sharma, Guwahati Chapter Chairman, OBs of Patna Chapter and SSC Bihar, SSC WB and RSC of Region-II were not present however RSC Mr. Somnath has sent his proposal which is enclosed herewith, and special invitee Dr. Dipti Prasad Mukherjeen Fellow & Former RVP CSI. Following Resolution / Initiatives proposed in this meet;

- First of all two minutes silence is observed to pay homage to late Shri. Aniran Basu & Mrs. Sudha Raju.
- Md. Shams Raza, RVP-II initiated the Meet by welcome address to the participants.
- Prof. Dr. A. K. Nayak had addressed the meet and elaborated the new plans and objectives of CSI. Also he requested to put special thrust on rural and corporate participation in CSI.
- Prof. Dr. R. K. Vyas had made aware the participants about the financial rules and regulations of CSI including TAN, GST and also requested to increase CSI activities conferences & Seminars in all the chapters and Regions.
- Mr. Gautam Hajra, Kolkata Chapter Chairman had given brief details of Chapter activities in the year 2018-19. Also he informed about recent agreement between CSI Kolkata and MAKAUT Kolkata for joint It educational projects. Also he assured to the president to close all other bank accounts just

after maturities of FD in such accounts for which he will be sending details to president and ExecCom.
- Mr. Shikhar Shrama, Guwahati Chapter Chairman had informed about resumption of Guwahati Chapter and propose to hold a Regional Conference at Guwahati Chapter in future. Also he had requested to give special discount in membership fee for North East region to increase membership in this region. He promised to support in opening CSI chapters at Shillong and Sikkim under this region.
- Mr. Nilesh Narayan, Patna Vice Chairman informed about future plan under his chapter to organizes Seminars and Workshop also he informed about allotment of Institutional membership to Amity University, Patna and International School of Management, Patna. Also he promised to increase membership under his chapter.
- SSC Bihar Mr. Gopal Krishna had informed that a national event will organized in November 2019 at NSIT Student branch and he is trying to open more student branches in Bihar in this year.
- Mr. Sourav Chakravorty, Kolkata Chapter Secretary suggested that membership process should be automated and every member should get their e-ID or e-Certificates immediately.
- Mr. Dipti Prasad Mukherjee had appreciated CSI activities and initiatives and he assured to continue support of ISI for CSI events.
- Finally Meeting is ended with vote of thanks by Patna Chapter Secretary Mr. C. N. Prasad.

Decrypton 6.0

Amity CSI Student Branch (Region-I), Amity University Uttar Pradesh
Reported by **Mr. Arvind Sharma**, Regional Vice President (Region-I)

Gist of the Event :

Decrypton 6.0 was organized by the Amity CSI Student branch on 5th September, 2019 at Amity University Uttar Pradesh, Noida campus. It was a one-day event that witnessed enthusiastic participation from students. Around hundred students from different disciplines of Engineering showed keen participation during the event. The event was a combination of a treasure hunt and also tested technical know-how of the participants. The participants were presented with an encrypted text using some ciphers which they had to solve to find the enclosed message that reveals the key to find the treasure.

The event was divided into three rounds. The first round was an elimination round in which the encrypted text contained another cypher and the location of second round. In the second-round participants were given another encrypted text which contained the instructions to solve the cypher discovered in the first round. The participant who deciphered the text in the least possible time won the competition. The event ended with a vote of thanks to all participants to make the event a huge success.

GLIMPSES OF THE EVENT

National Workshop on "CYBER SECURITY"

Reported by **Dr. S C Yadav**, Associate Professor and Head,
Centre for Computer Science and Technology, Central University of Jharkhand, Brambe, Ranchi

Organized by : **Department of Computer Science and Technology**

Technical Collaboration: **CSI Div. V - Education and Research**

The 5 days' workshop was jointly inaugurated by the CSI President, Prof. A K Nayak, Prof. N K Yadav "Indu", Vice Chancellor, Central University of Jharkhand; and Chief Guest of the workshop Mr. Anurag Gupta, Additional Director General of Police – CID, Ranchi, Jharkhand and and Dr. Subhash Chandra Yadav, Head, Department of Computer Science and Technology, Central University of Jharkhand, Ranchi.

Lightning the Lamp by the dignitaries

Presidential Address by Prof. N K Yadav "Indu", Vice Chancellor, Central University of Jharkhand

Prof. A K Nayak inaugurated the Institutional membership of Central University of Jharkhand for 10 years.

The CSI President Prof. A K Nayak while addressing in the inaugural function

The delegates of workshop happened has been provided the study material on cyber security. During the inaugural ceremony two books written by Dr. Subhash Chandra Yadav have been unveiled, one on "Cyber Security and Other on" UNIX: A Practical Approach".

Key note address was delivered by Mr. Rakshit Tandon, renowned Cyber expert from Delhi.

Eminent personalities of Cyber Security were resource persons of the workshop mainly, Mr. Sachin Gupta, Cyber expert form Lucknow, Mr. Saurabh Kumar and Mr. Shivendra Kumar form Ranchi, Mr. Amritansh Vats, Forensic expert form Ranchi High Court and Prof. Dilip Kumar from NIT, Jameshdpur.

Unveiling "Cyber Security" book by the dignitaries

NRC'2019

Northern Regional Convention on Digital India

Genesis, Perspective and Prospective

उद्भव, परिप्रेक्ष्य एवं प्रत्याशा

14th December, 2019

at PNBIIT Auditorium, Gomti Nagar, Lucknow

National Advisory Committee	**Prof. A. K. Nayak** President, Computer Society of India
	Shri R. K. Vyas Vice President cum President Elect, Computer Society of India
	Prof. Santosh K. Yadav Hon. Secretary, Computer Society of India
	Dr. Durgesh K. Mishra Hon. Treasurer, Computer Society of India
	Shri Sanjay Mahopatra Immediate Past President, Computer Society of India
Convener	**Shri Arvind Sharma** Regional Vice President-1, Computer Society of India
Organising Chairman	**Shri G. P. Singh** Chairman, Lucknow Chapter Computer Society on India
Co Convener	**Shri Deepak Sharma** Member National Nomination Committee, Computer Society of India

CALL FOR PAPERS

Today the technology is revolving around the Information. Digital India is the buzz word today. The focus is to reach out to the last person in the remotest places of India. The information related to the facilities, schemes and planning needs to be transferred to the masses. At the same time ensuring the security of the data is a major issue in today's scenario. The technocrats are involved in developing the applications which can take care of the digital needs of the people.

How the Digital India had the potential to transform existing public service delivery system, improve productivity, create jobs and induce economic activity in areas that are not digitally connected and could India overcame barriers of soloed implementations, non-availability of robust last mile connectivity, processes improvements, capacity constraints, and efficient operational models and by leveraging the emerging technologies like cloud, social media, analytics and mobility during past 4-5 years? And finally what the future has in store for Digital India and our journey towards creating New India ?

To discuss the issues we invite the technocrats and end users both to come together to deliberate on the general needs, development of infrastructure, the work in progress, the work already complete and the effect of whatever progress has been made in this direction on the following issues :

- Transforming e-Governance for Transforming Governance
- Leveraging Internet of Things for Smart City
- leveraging the flexibility, agility and cost effectiveness offered by cloud technologies
- NGIS (National Geo-Spatial Information System) as a platform and as a service in e-Governance projects
- Cyber Safety and Security in Digital India
- Analytics Insight and Big Data for Common Citizen Services
- Financial Inclusion through Mobile Banking, Electronic and Cashless

The Programme Committee of "Northern Regional Convention'2019" invites papers for presentation at the convention on aforesaid topics. Papers not exceeding 5000 words, formatted in Microsoft Word in standard A4 size in portrait with "Times New Roman" font size of 12 and line spacing of 1.5, should be sent through email as an attachment to **nrc19lko@gmail.com** and copy to **a.arvind.sharma@gmail.com** with the subject as "NRC'2019 - Paper". **The last date for the submission of Paper through email is 30th November 2019.**

POSH Act 2013

Reported by **Prof. J. Jerald Inico**, Chapter Secretary, Chennai

CSI Chennai Chapter in association with Internals complaints committee and women's cell of Patrician college of Arts and Science presented a presentation titled "Sexual Harassment of Women – Prevention, Prohibition, Redressal and legal protection of Women in workplaces and education institutions". The event was co-sponsored by Jeyachandran Textiles, Pallikaranai ,Chennai.

The speaker of the day was Dr. M. Pavithra. M.A. Ph.D., she is the assistant professor of the department of human rights and duties education from Ethiraj College for Women.

The presentation began with the introduction of the theme by Prof. J. Jerald Inico, Hony. Secretary, CSI Chennai Chapter and the welcome address by Prof. P. V. Subramanian, Vice Chairman and the felicitation of the guests by Mr. Anantha Padmanaban, Treasurer, CSI Chennai Chapter and Mr. Mahendranth, MC member, CSI Chennai Chapter. Dr. Fatima Vasanth, Academic Director, Dr.Usha George, Principal, Prof. Sri Vaishnavi, coordinator – Women Cell, Prof. Usha, coordinator – Internal Complaints Committee of Patrician college of Arts and Science along with 210 participants witnessed the event. Mr. Balu, Chairman – Cyber Society and Former DSP re-released the booklet "Handbook – POSA Act 2013".

The Speaker started with defining the meaning of the term Sexual Harassment and went on to explain the various incidents and situation which is considered as harassment. She communicated with audience through few stories which made us think about the violence done against women. She addressed gender discrimination and shared her life story of how she excelled in criminology surmounting odds from her family. She explained sexual favourism and how it is harmful in our growing society. She clarified the term related to the topic by raising few questions to the audience. She also highlighted how the roles and power are misused.

Then she came to prevention and prohibition of the offence. Here, she advised the audience with a few provisions of prevention of sexual harassment 2013 and how to overcome the offence.

She mentioned how the complaint committee in any organization will approach such complaints. She stated the process quite simply, i.e. the affected person must file a complaint with the authorities either at superior level or at the government level. Then with interviews and reasoning the complaint committee will move on to find the evidence and will write a report which in turn provokes the necessary actions. Thus, she ended the seminar by asking participants to be awake and do the necessary action regarding the sexual harassment.

She also requested the law makers to amend it to avoid loop holes. Sexual harassment is an incident of heavy consequence in the life of the victim, the time period of three or six months needs to be extended further to enable the victim to overcome the trauma and file a complaint.

The presentation ended up with the lucky draw and distribution of prizes sponsored by Jeyachandran Textiles, Pallikaranai, Chennai., to promote punctuality of the attendees and event was a success on the whole.

Second National Cyber Security Summit 2019

Organised by CSI Kolkata Chapter. Venue : Indian Statistical Institute, Kolkata

Reported by **Mr. Gautam Hajra**, Chairman, CSI Kolkata Chapter

The chapter organized Second National CYBER SECURITY Summit 2019 at Indian Statistical Institute, Kolkata on 7th September 2019. Last year, CSI Kolkata chapter organised the First National Cyber Security Summit on 6th October 2018 at TCS Wanderers Auditorium, Sector-V, Saltlake, Kolkata-700 091 with a thunderous success. This year summit was no exception. The theme Cyber Security based on the perspective of Information Security, Data Security, Enterprise Security, Wi-Fi security, Cloud Computing Security in different Govt and Private companies like Bank, Railways, Municipal Corporation Bodies etc. The main goal was creating awareness about new threats and challenges in the field of Security and how to handle them. The focus of the Seminar was full length discussion on different types of Security breaches, possibilities of a malicious attempt to damage or disrupt a computer network or system and how Cyber laws handle it.

This Summit was full of galaxy of speakers and eminent guests. Some of the notable names were honorable Chief Guest Sri Debashis Sen, IAS, Additional Chief Secretary, Dept. of IT, Govt. of WB & Chairman, HIDCO, Prof. (Dr) Bimal Roy, Chairman National Statistical Commission and Former Director ISI, Prof. Dr. A. K. Nayak, National President of Computer Society of India, Mr. Prodip Mukhopadhyay, M D Webel and Prof. Atal Chaudhuri , Vice-Chancellor of Veer Surendra Sai University of Technology (VSSUT), Burla. Honorable Mr. R. N. Lahiri, CSI Fellow & Summit Convener, gave welcome address and briefly discussed about different aspects of cyber security. Sri Debashis Sen, IAS, Additional Chief Secretary, Dept. of IT, Govt. of WB highlighted the role of Cyber Security and some major initiatives taken by Govt. of West Bengal.

In his Inaugural Address, CSI President Prof. (Dr.) A. K. Nayak explained what are the best practices to follow in organizations and personal life to keep ourselves safe and secure. Keynote Address given by Prof. (Dr.) Bimal Kumar Roy, Chairman National Statistical Commission and Former Director ISI. Prof Bimal Roy explained lucidly how data breaches wreak havoc with the release of secure or private/confidential information to an untrusted environment. In his speech at the closing of inaugural session, Chapter Chairman Mr. Gautam Hajra, said that an event like this cannot happen overnight. He mentioned that the wheels started rolling few months ago. He thanked all the advertisers who helped CSI, especially ISI without their help this type of Summit can't be arranged. He also mentioned the name of team members who relentlessly worked to make this program a grand success.

Prof. (Dr.) Chandan Majumdar of Jadavpur University gave a lecture on the topic Software Defined Security. As a distinguished speaker, Prof. (Dr.) Subhamoy Maitra of ISI explained in depth on his topic," Recent Developments in Quantum Communication". In the second session, Mr. Sandeep Sengupta, Indian School of Anti Hacking critically explained about myth called Privacy. Mr. Prodip Mukhopadhyay, MD, WEBEL with the help of some real life examples elucidated Cyber Threats & Challenges in Emerging Technologies. Eminent Lawyer and Public Prosecutor, Govt. of West Bengal. Mr. Bivas Chatterjee explained what are Cyber Law, and the role of Electronic Evidence. With the help of some real life case studies he briefly touched upon latest cyber crime scenario in West Bengal as well as India.

Mr. Subhojit Ganguly of NASSCOM nicely explained what is Information security in common parlance and how common people can be benefitted. Sri Saurav Mitra Principal Technical officer, C-DAC, explained the role of India Government and its initiative in Cyber Security. The last speaker of the Summit was Mr. Kuntal Siddharth of Kolkata Police Cyber Crime branch; he presented some real life case studies and discussed different types of Cyber crime in west Bengal and how to combat it. Finally Mr. Gautam hajra, chairman of CSI, Kolkata chapter gave mementos to the following CSI members who contributed significantly in this event like Snehashish Bannerjee, Treasurer Aniruddha Nag, Vice Chairman, Sri Sourav Chakraborty,Secretary, Sri Ranjoy Kr. Ghosh , Sri Sekhar Sarkar and Sri. Rajat Kanti Chatterjee for their outstanding contribution in this Summit. Almost 100 students, 30 invitees and 40 Industry delegates were attended this Summit.

STUDENT BRANCHES INAUGURATION
REPORTS

MALINENI PERUMALLU EDUCATIONAL SOCIETY'S GROUP OF INSTITUTIONS, GUNTUR (REGION-V)

The CSI Student Branch at Malineni Perumallu Educational Society's Group of Institutions, Guntur has been inaugurated on 6th September 2019 followed by a two day workshop on Statistics with R Programming. Mr. Kalisetti Durga Prasad, Senior Systems Engineer, TCS, Chennai was the resource person for the workshop. The event started with inaugural session. The Director of the Institution Dr. P Nageswara Rao, Principal of the Institution Dr. D Srinivasa Kumar, Dean faculty of Engineering Dr. P Ramesh Babu, Head of the CSE department Dr. D Ravikiran addressed the students and explained the use of CSI student branch and activities to be conducted on different technologies required for the present day Industry and how Data Science play a vital role in the industry.

Then the session is continued by the resource person Mr. Kalisetti Duga Prasad and he explained the concepts of statistics with R programming with live examples. He explained various topics including data types, R objects, Summary statistics, Regression techniques, Probability distributions and finally T-test and Annova tests. Students practiced all the Techniques taught by the resource person and applied in the laboratory and the two day session completed with a great satisfaction of learning many techniques in the area of Data science with R programming. The workshop concluded on 7th September 2019 at 5 PM with vote of thanks by Dr. D Ravikiran, Head of the department CSE.

NATIONAL ENGINEERING COLLEGE, KOVILPATTI (REGION-VII)

CSI Student Branch of National Engineering College organized inaugural function for the Academic Year 2019-2020 on 16th August 2019. Mr. K Vinoth Kumar, CSI Student President (Final year IT), welcomed the gathering. Ms Shenbaga Abirami, Technical Executive Member (Pre-Final year-CSE) introduced the Chief Guest. CSI Annual Report was released by the Principal and the first copy was received by the Chief Guest. Ms A Dhanalakshmi, Final year IT, Treasurer of CSI, proposed the activities for the academic year 2019-2020. Mr. K Raj Kumar, AP-CSE Students Coordinator, introduced the office bearers of CSI for the academic year 2019-2020. Dr. K Kalidasa Murugavel, Principal presided over the function and in his presidential address, encouraged the students to expose their talent through the NEC CSI Students' Branch. Mr. A Murugan, Chief Engineering Manager of Magna Troy, US was the chief guest. He advised the students to learn inter-disciplinary concepts and also insist the students to apply their knowledge in real time application. He congratulated the NEC CSI Students' branch for conducting many programs and industrial oriented workshops. He advised the students to participate actively in branch activities to improve their leadership and professional qualities. The joint secretary Mr. N V Anton Francis Jeejo read the oath of CSI and followed by all the office bearers of NEC CSI. The Video launch of CSI had taken place

and finally the vote of thanks was proposed by Mr. M Abinesh, Pre-Final year CSE, CSI Vice President. Under the effective guidance of Dr. D Manimegalai, NEC CSI President, Professor & Head-IT, the Student Branch Counsellor of NEC Mr. L Jerart Julus, Staff coordinator of NEC CSI Mr. K RajKumar and the members of NEC CSI Students' Branch made this inaugural a resounding success.

SRI VENKATESWARA COLLEGE OF ENGINEERING, SRIPERUMBUDUR (REGION-VII)

The Inaugural function of the CSI Student Branch of Sri Venkateswara College of Engineering, Sriperumbudur for the academic year 2019-2020 was organized on 16th August 2019 in the presence of esteemed Chief Guest Dr. S Pushpa, Professor and Head, Department CSE, SPIHER, Avadi. Event was compered by Ms Kaaviya Baskaran, Secretary of CSI. The session began with the prayer song by Kaaviya Baskaran. Mr. Jaswanth Komaleeswaran, Chairman of CSI, welcomed the chief guest and the gathering. Dr. V Vidhya, Student Chapter Counselor presented the Annual report of 2018-2019 and offered valuable inputs on the importance of goal setting and working towards the goal in a steady fashion. Mr. Ranjith, Student Chapter Counselor of CSI read out a brief description about the office bearers and welcomed them to the dias. It was followed by the introductory address about the chief guest by Mr. Shravan, Executive Member of CSI. Dr. S Pushpa delivered an informative talk on "Recent IT Trends and Applications of Soft Computing". Dr. S. Pushpa had been a former faculty of Sri Venkateswara College of Engineering (SVCE). She rendered an interactive talk hurling questions and facts about the competitive world that lies outside college. The session lasted for about ninety minutes. The Guest of honour introduced the buzzwords of IT industry and gave a brief overview of the same. She also engaged the audience by throwing in a couple of questions to the students regarding these fields. Mr. Vivek, Treasurer of CSI delivered the vote of thanks. The session came to an end with Dr. V Vidhya presenting the memento to the Chief Guest. Total No of Participants: 68 CSI Volunteers from CS/IT/ECE dept and Faculty Members. Provide awareness to the students about current IT trends and challenges enable students to gain wider exposure on the latest applications that are available in the field of soft computing Ideas on focussing towards domains like Data Mining, soft computing, Machine learning.

MALNAD COLLEGE OF ENGINEERING, HASSAN, KARNATAKA UNDER CSI, MYSORE CHAPTER. (REGION-V)

Malnad College of Engineering, Hassan opened their student branch of CSI on 16th September, 2019 at MCE campus, Hassan. The inaugural ceremony was graced by the presence of CSI Mysore chapter team comprising Er. Aruna Devi, Chairperson, Mr. J G Venkatesh, Secretary, Er. Veerandar Kumar, Past Chairman, Er. Anita Venkatesh, Karnataka State Student Coordinator and Er. Shrivathsa J V, MC Member. Dr. Jayantha K S, Principal, Dr. Chandrika J, Professor, Dept. of CSE and other faculty members of MCE were present.
The program was attended by more than three fifty students. Er. Veerandar Kumar highlighted on the benefits of becoming a CSI student member. Er. Aruna Devi stressed on the role played by CSI in Industry Institute Interface in helping the students acquire additional skills thus making them ready for the industry. Er. Anita Venkatesh highlighted on the activities that could be organized under the CSI Student branch. Dr. Jayantha said that the college will take an important role in achieving the objective of CSI. Dr. Chandrika said that the student branch at MCE had proposed to have a connectivity with the IT professionals from industry in order to enhance the knowledge of the CSI student members. Maximum effort would be made to organize different workshops, conferences, guest lectures, seminars, competitions and research activities. The program concluded with a vote of thanks by the CSE faculty.

BANGALORE CHAPTER

One day Hands on Workshop on Deep Learning Kesar organized by CSI Bangalore Chapter on 7th Sept 2019. Dr Anbunathan R, Chairman, CSI Bangalore Chapter and Senior Project Manager, LG Soft India Pvt. Ltd, Bengaluru was the resource person for this workshop. Research Scientist, IT Engineers, Academic Experts, Entrepreneurs and Students attended the workshop. The following topics were covered: Basic of Deep Learning, Neural Networks, Network Architectures, Recurrent Neural Networks, Keras, Convolution Neural Networks, Transfer Learning, Data Pre-processing, Model and Fit, Train and Test, Predict and Evaluate, Optimation.

Prof. R K Vyas, Vice-President of CSI has visited the CSI Bengaluru Chapter Premises on 14th September 2019. The Chairman of CSI Bengaluru Chapter Dr Anbunathan along with Management Committee members are felicitating the Vice President of CSI Prof R K Vyas. He discussed various activities of CSIBC with the Committee Members

CHENNAI CHAPTER

CSI Chennai Chapter in association with Loyola Institute of Business Administration organized a presentation on "Utilizing Healthcare IT to transform Healthcare delivery Are We missing the opportunity?" by Dr Sumanth C Raman, M.D.(Gen Med.) DCH.,

Healthcare Domain Expert, Tata Consultancy Services Ltd on September 7th 2019 at 8.30 am at LIBA Auditorium, LIBA, Chennai. Prof J Jerald Inico, Hon Secretary, CSI-Chennai Chapter was the Master of Ceremony, who introduced the dignitaries including Dr Sumanth C.Raman, Guest speaker, Father Roach S.J., Dean-LIBA, Dr E Iniya Nehru, Chairman CSI Chennai Chapter, Prof P V Subramaniam, Vice-Chairman, CSI Chennai chapter, Mr. Anantha Padmanaban, Treaurer, CSI Chennai Chapter, Dr. M. J. Xavier, Chair-Person − Management Programmes, Lt. Col. Subramanian felicitated the Chief Guest. Mr. Vasudeva Rao, past Chairman and Mr. S. Ramasamy, Past Vice President felicitated Fr. Roach and Dr. M. J. Xavier respectively. Dr. E. Iniya Nehru, Chairman CSI Chennai Chapter recalled a 20 year old relationship with the Guest Speaker, working together in various health care related projects. He also mentioned that Dr. Sumanth played a vital role in the development of Govt. of Tamilnadu's healthcare development with IT industry. He also quoted that all the Govt. Hospitals in Nellore are computerized by providing a unique number to the patients. Fr. Roach from the host institution addressed the gathering and Dr. M. J. Xavier introduced the chief guest with all credentials. The Presentation started enthusiastically highlighting on phenomenal potential on better quality healthcare, stating the problems faced and to how to resolve the issues. A comparison of death rate in US and Indian insurance holders was discussed. A brief note on quality healthcare was given by stating various examples. The method of measuring surgery success rate was explained. He also stated that in recent years by utilizing IT facility the maternal & infant mortality rates have dropped significantly. The development in telemedicine was discussed along with the implementation of DSS (Decision Support System) in the healthcare industry. AI enhanced quality of care, m-health and IT related technology in healthcare were well explained. The importance of EMR (Electronic medical reports) was briefed. The 4D's diseases, doctors, drugs, devices were termed as collaborated issues in healthcare industry. The success rate for the design of e-health models by IBM Watson for oncology treatment was explained. The importance of tele-radiology was discussed. Terms like Butterfly Pocus, 5D imaging, SIP (Smart Infusion Pump) and the 4p's (Predictive, pro-active, prospective, pattern recognition) and Virtual reality were discussed. Participants from various Hospitals, Industry, Universities and Colleges interacted well during the question hour. Lucky draw was conducted to enhance punctuality and the prizes sponsored from Jeyachandran Textiles, Pallikaranai, Chennai were distributed. Certificates were given to all the participants. Dr. A. Prema Kirubakaran, MC member briefed the entire summary and Prof. P V Subramanian, Vice chairman announced the next event and proposed the Vote of thanks. The day was ended with full of Knowledge, Skills and Wisdom on IT in Health care.

COIMBATORE CHAPTER

CSI Coimbatore Chapter organized monthly Lecture meeting on "BIG DATA FOR BUSINESS" on 22nd August 2019. Dr. N.R. Alamelu, Chairperson, CSI – Coimbatore Chapter welcomed the gathering. The Speaker Mr. Shyam Velumani, Co founder Venpep solutions delivered the lecture. The speaker gave insights into the various concepts of big data and its business applications. The Categories of data which would be handled by big data analyst where briefed. He also explained about the architecture employed using big data for solving the real world problems. He explained about the key data analytic components as well. Mr. Shyam Velumani briefed about the various projects he had worked for namely vidCampaign project and customer profiling project for Indian Tourism. Various case studies employing big data were discussed and to name a few:

Analytical system to device the direct and dotted line relationship of employees for a multinational financial institution. Business intelligence for a leading jewellery manufacturing company. Global social engagement company taking advantage of the digital transformation to measure the internal performance. The speaker concluded the talk with question and answer session. All the queries related to internship, job opportunities, academy, to corporate were addressed by the speaker. The session was very informative and useful especially for all the students who attended the session. At the end of the session, Prof. A. Sivabalan, Immediate Past Chairman CSI Coimbatore chapter thanked all the members. More than 90 faculty and students from various colleges and members from industries attended the programme.

Coimbatore Chapter organized monthly Lecture meeting on "DIGITAL TECHNOLOGIES FOR INDUSTRY 4.0" on 17th September 2019. Dr. N. R. Alamelu, Chairperson, CSI, Coimbatore Chapter welcomed the gathering. Dr Vijay Pandiarajan, IT consultant Detroit, US, delivered a talk on "Digital Technologies for Industry 4.0". He defined Industry 4.0 as a new phase in the industrial revolution that focuses heavily on interconnectivity, automation, machine learning, smart manufacturing and operations with smart digital technology to create a more holistic and better connected ecosystem for companies that focus on manufacturing. He also referred the KPMG report which indicates IoT, Artificial intelligence, Big data analytics, Augmented reality, Cyber security, Cloud computing, Robotics, Edge computing and Additive manufacturing as the components of Industry 4.0. The major benefits of Industry 4.0 are that it is time saving, expands customer market, increased revenue and reduced costs. He indicated that the key enablers of this technology are micro services, software networks and agile software development. He also spoke on the Gartner hype cycle which included advanced AI and analytics, digital ecosystems and mobility. The speaker emphasized on the interdisciplinary approach that needs to be practiced by everyone to be a successful professional. There were around 100 participants from various colleges including faculty members and students. Dr. G. Radhamani, vice chairperson proposed the vote of thanks. Mr. Jayaprakash, senior CSI member presented a memento to the resource person.

KANCHEEPURAM CHAPTER

The Office Bearers Meeting of CSI Kancheepuram Chapter held on 9-8-2019 at Chapter office, C/O SRM Valliammai Engineering College. Dr. B Chidambararajan, Chairman of CSI Kancheepuram Chapter presided over the meeting. The Chairman and Dr. Rajeswari Mukesh, Vice-Chairman extended the greeting to the members and initiated the discussion.
The Following Points were discussed in the meeting.
1. Planning of for coming Activities of this year
2. Enrolling more life members in our Chapter.
3. Nominating auditor for the chapter account.

4. Organizing events for the students through Industrial collaborations.

CSI Kancheepuram Chapter in association Student Branch of SRM VEC organized a "Training Programme on IoT" for the school students on 17th August 2019 at SRM Valliammai Engineering College. 64 students of XII standard (Computer Science Branch) from Little Jacky Matriculation Hr. Sec. School had participated along with 3 of their school teachers. The programme was inaugurated with a technical talk by Dr M Senthil Kumar, Hon Secretary of CSI Kancheepuram Chapter by delivering the importance of learning technologies as a computer science student and briefed about the various emerging technologies in the field of computer science. It was then preceded with the presentation about IoT. An introductory Audio Visual was played showing the impact of IoT with which the students found interesting and answered the basic questions about IoT. Following the Audio Visual, Introduction to IoT along with its impact in the modern world was narrated. Further the presentation was discussed among the students with the applications, benefits and challenges of IoT. The students found the session was informative and had a discussion about their interests and the scope of IoT. After the technical session, the students were split into batches to make them participate in the events simultaneously. Technical Quiz and Connections from the subjects Physics, Chemistry, Computer Science and General Knowledge was conducted by Ms S Shanthi, AP and Ms K Devi, AP from Dept. of CSE for the students to make them more interactive. Team Building activities like Object Identification for Memory Test, Unscramble the Proverb for Knowledge Test and Communication Activities were conducted by Mr K Elaiyaraja, AP and Ms S Sandhya, AP from Dept. of IT. The students actively participated in the event as teams and the winning team was appreciated with a token of gift. The hands- on- session was initiated with a presentation about the tools and working environment required to develop IoT products by Dr D Kavitha, AP-Dept. of CSE. The students were demonstrated with the projects by CSI Volunteer Students coordinated by Ms S Shenbagavadivu, AP-Dept. of IT at IoT-COE Lab, Dept. of CSE. The above experiments were also executed by the school students as a team which they found interesting and informative. The hands-on-training was interactive by querying more on the working of IoT based projects. Finally feedback from the students and teachers was obtained in which they mentioned that the Training Programme was really fruitful. The Event was organized under the guidance of Chapter Chairman Dr. B Chidambararajan.

KOLKATA CHAPTER

CSI Kolkata chapter organized three days workshop on use and application of Statistical Package for the Social Science (SPSS) from 13th to 15 September 2019 for budding researchers at CSI Kolkata chapter office. This course was intended for beginners and those looking for research and development. During the above mentioned three days, intensive practical (hands on) was imparted in different application of data analysis using SPSS with lectures, and software exposures. The basic objective of the workshop is designed to acquaint researchers with the use of SPSS. The aim of the workshop is to enable the participants to operate the SPSS software on their own and understand when and what type of statistical method to use. The course was conducted by Dr Baidyanath Pal of ISI who is expert on Data Analysis and SPSS and was amply assisted by Ms Nairrita Bhattacharya and Dr Debsri Dey. The main objective of CSI Kolkata chapter was to impart training and share knowledge of using SPSS with basic knowledge in statistics. SPSS is a great tool of data handling and analysis in social sciences research. Other tools such as excel and other database are also used for the same purpose but SPSS provides an easy access to descriptive statistics and frequencies (Responses), that gives a wider variety of charts & graphs, better and more flexible pivot tables and provides a full set of statistical tests which is helpful for researchers. In short SPSS saves time and increases productivity and makes it easy to understand statistical results. The workshop provided an interactive atmosphere between the resource persons and the participants. The course formally ended on 15th September with valedictory function chaired by Mr. Gautam Hajra, Chapter Chairman and Vice Chapter Chairman Mr. Aniruddha Nag and distribution of certificates. Twenty six Participants gave their valuable feedbacks suggesting similar workshops to be organised in future with more number of days.

www.csi-india.org

FROM CSI STUDENT BRANCHES

REGION-III
B.V.M. Engineering College, Vallabh Vidyanagar

14-9-2019 - Workshop On Database Design : A Practical Approach

18-9-2019 – Workshop on Cloud Computing using AWS

| **Devang Patel Institute of Advance Technology and Research, Anand** | **Dharmsinh Desai University, Nadiad** |

27-7-2019 - Workshop on Types of Routing & its Protocols

14-9-2019 - Expert Session on Cloud Computing

REGION-IV	REGION-V
Shri Shankaracharya Inst. of Professional Mgmt. and Tech., Raipur	**Narasaraopeta Engineering College (Autonomous), Narasaraopet**

12-8-2019 - SDP on Internet of Things

13-9-2019 - Paper Presentation Contest on Machine Learning

REGION-V
Kallam Haranath Reddy Institute of Technology, Chowdavaram

13-9-2019 – Contest on Ideathon

14-9-2019 - Prize Winners in the Technical Paper Presentation

REGION-V

Narayana Engineering College, Nellore	Amrita School of Engineering, Bangalore
3-8-2019- Seminar on Web Development	15-8-2019 - Online Quiz Competition on Business Intelligence
BVRIT Hyderabad College of Engineering for Women, Hyderabad	**Usha Rama College of Engineering & Technology, Telaprolu**
18-9-2019 & 19-9-2019 - Workshop on Ethical Hacking & Cyber Security	15-9-2019 - Engineer's Day Celebrations & Technozola Students Technical Association Anniversary

B.M.S. Institute of Technology & Management, Bangalore	
4-5-2019 – Event on Partial Delivery	13-8-2019 - Problem solving analysis with basics of C by Team Hackslash
GSSS Institute of Engineering & Technology for Women, Mysore	**Gudlavalleru Engineering College, Gudlavalleru**
22-8-2019 to 24-8-2019 - Workshop on Android Application Development	19-8-2019 & 20-8-2019 - Student Development Program on Ethical Hacking & Malware Analysis

REGION-V

Sai Vidya Institute of Technology, Bangalore

6-9-2019 - Workshop on Google AI - Explore Machine Learning

18-9-2019 & 19-9-2019 - Workshop on NS -2

Santhiram Engineering College, Nandyal

19-8-2019 - Guest Lecture on Latest Developments in CS

19-8-2019 - Awareness program on Cisco Networking Academy

CMR Technical Campus, Hyderabad	Geethanjali Institute of Science & Technology, Gangavaram, Nellore

6-9-2019 - Seminar on Digital Marketing and Higher Educational Opportunities

23-7-2019 to 27-7-2019 - Workshop on Internet of Things

NBKR Institute of Science and Technology, Vidyanagar, Nellore

13-8-2019 - Social Activity as Clean and Green at Yellasiri Village

28-8-2019 - Technical Event on Clusters to improve the Problem Solving Analytical Skills

REGION-V	
St Joseph Engineering College, Mangaluru	**Malineni Perumallu Educational Society's Group of Institutions, Guntur**
24-8-2019 - Hands-on session on DB Application Development using Java language	16-9-2019 to 21-9-2019 - Workshop on Sales Force ADX-201
Aditya Engineering College, Surampalem	**V R Siddhartha Engineering College, Vijayawada**
22-8-2019 - Hands on Session on Cyber Security	31-8-2019 - Guest Lecture on Enhancing Skills in Problem Solving
New Horizon College of Engineering, Bangalore	
24-8-2019 - Motivational Talk on Introduction to Emotions and Management of Emotions	14-9-2019 - Workshop on Big Data and its Technologies
Chalapathi Institute of Engineering and Technology, Guntur	
13-9-2019 to 15-9-2019 – Bootcamp and 24 Hrs TEKHACK	19-9-2019 - Technical Quiz Competition

REGION-V
Anurag Group of Institutions, Hyderabad

18-7-2019 to 20-7-2019 – Event on Database Programming with SQL	29-8-2019 to 31-8-2019 - Event 36Hrs IoT Hackathon

REGION-V	REGION-VI
K S Institute of Technology, Bangalore	Prof. Ram Meghe Institute of Technology & Research, Amravati

14-9-2019 - Technical Talk on Smart India Hackathon-2019	23-8-2019 - Technical Event on C3- Come-Compete-Conquer (Coding Competition)

REGION-VI
Marathwada Mitra Mandal's College of Engineering, Pune

2-8-2019 - Seminar on Agile Frameworks	9-8-2019 – Hands-on workshop on MongoDB

REGION-VI	REGION-VII
Guru Gobind Singh Polytechnic, Nashik	Sri Kanyaka Parameswari Arts and Sc. College for Women, Chennai

29-8-2019 to 31-8-2019 – Faculty Dev. Training on Internet of Things	18-9-2019 - Paper presentation on Visionary Women

REGION-VII

Kongu Engineering College, Perundurai, Erode

31-8.2019 – Hands-on Workshop on Python Programming

7-9-2019 – Hands-on Workshop on Mobile Application Development

Rajalakshmi Engineering College (Autonomous), Chennai

7-9-2019 - Seminar on Opportunities 2020 by Mr D Karthikeyan, TCS

14-9-2019 - Workshop on Creating Chatbots Using Django and Python

SVS College of Engineering, Coimbatore

Panimalar Institute of Technology, Chennai

5-9-2019 - Workshop on Network Simulation using Flow Monitor Module of NS-3

6-9-2019 – Workshop on Robotics

SRM Valliammai Engineering College, Kattankulathur

30-8-2019 - Technical Contest

13-9-2019 - Mini Project Expo 2019-20

REGION-VII	
Shri S S Shasun Jain College for Women, Chennai	**National Engineering College, Kovilpatti**

13-9-2019 – Seminar on Workplace Safety & POSH |

8-8-2019 – Event on Pre Placement Talk |
| **Ramco Institute of Technology, Rajapalayam** | **Sri Kanyaka Parameswari Arts and Science College for Women, Chennai** |
|

31-8-2019 - Workshop on TensorFlow |

4-9-2019 - Workshop on Interview Skills |

IFET College of Engineering, Villupuram	

22-8-2019 - Internal Symposium (Technovision'19) |

24-8-2019 - External Symposium (IFET Mindsparkathon'19) |
| **Mount Zion College of Engineering & Technology, Pudukkottai** | **Sethu Institute of Technology, Kariapatti** |
|

2-8-2019 – Event on Code War on Python |

24-8-2019 - Workshop on PEDAGOGY |

Call for Paper for CSI Journal of Computing

(e-ISSN: 2277-7091)

Original Research Papers are invited for the **CSI Journal of Computing**, published on line quarterly (e-ISSN: 2277-7091) by the Computer Society of India (CSI). The Journal of Computing, offers good visibility of online research content on computer science theory, Languages & Systems, Databases, Internet Computing, Software Engineering and Applications. The journal also covers all aspects of Computational intelligence, Communications and Analytics in computer science and engineering. Journal of Computing intended for publication of truly original papers of interest to a wide audience in Computer Science, Information Technology and boundary areas between these and other fields.

The articles must be written using APA style in two columns format. The article should be typed, double-spaced on standard-sized (8.5″ x 11″) with 1″ margins on all sides using 12 pt. Times New Roman font and 8-12 pages in length. The standard international policy regarding similarity with existing articles will be followed prior to publication of articles. The paper is to be sent to Prof. A K Nayak, Publisher, in the email id : csi.journal@csi-india.org with a copy to aknayak@iibm.in, CSI Journal of Computing.

Prof. A K Nayak
Publisher

KIND ATTENTION !
Prospective Contributors of CSI Communications

Fourth Coming Issues : November 2019 : Cyber Security

Please note that Cover Theme for **November 2019 issue is Cyber Security**. Articles may be submitted in the categories such as: Cover Story, Research Front, Technical Trends, Security Corner and Article. Please send your contributions by 20th September, 2019.

The articles should be authored in as original text. Plagiarism is strictly prohibited.

Please note that CSI Communications is a magazine for members at large and not a research journal for publishing full-fledged research papers. Therefore, we expect articles written at the level of general audience of varied member categories. Equations and mathematical expressions within articles are not recommended and, if absolutely necessary, should be minimum. Include a brief biography of four to six lines, indicating CSI Membership no., for each author with high resolution author photograph.

Please send your article in MS-Word format to Chief Editor, **Prof. (Dr.) S. S. Agrawal** in the email ids **csic@csi-india.org** with copies to the Publisher **Prof. A. K. Nayak**, in the email id : aknayak@iibm.in and Editor **Ritika Wasan,** Associate Professor Bharati Vidyapeeth's Inst. of Computer Applications and Management (BVICAM) in the
email id : rit_2282@yahoo.co.in

Issued on the behalf of Editorial Board, CSI Communications.

Prof. (Dr.) S S Agrawal
Chief Editor

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Computer Society of India - Annual Convention 2020
@ KiiT, Bhubaneswar, Odisha (16-18 January, 2020)
Theme: "Digital Democracy - IT for Change"

CALL FOR PAPER

Computer Society of India - is the largest association of IT Professionals in India with membership strength of over 1lakh in 76 chapters and 550 Student Branches all over the Country.

Computer Society of India is holding its prestigious Annual Convention (CSI2020) in world renowned University - KiiT, Bhubaneswar, Odisha from 16-18 January, 2020 in conjunction with an International Conference with the Theme " Digital Democracy - IT for Change " . Like previous years, the proceeding of the conference is likely to be published by Springer CCIS.

The articles for this International Conference should be within 8 pages in the Springer one-column format. All submissions are subject to screening for plagiarism by Turnitin. Double blind review system will be followed and each paper will be reviewed by at least three reviewers. At least one of authors of each accepted paper must register for the conference and present the paper in person at the conference.

For more details regarding submission, visit: www.csi-india.org/csi2020

Papers are to be submitted through the Easychair portal:

https://easychair.org/my/conference?conf=csi2020

Original research papers are invited in the following broad areas (but not limited to):

Digital Democracy	Digital Communication	Digital Analytics	Digital Security
• E-Democracy	• Distributed Computing	• Web Analytics	• Digital Forensics
• E-Governance	• Internet of Things	• Data Analytics	• Information Security
• E-Judiciary	• Cloud Computing	• Big Data Analytics	• Network Security
• E-Learning	• Mobile Communication	• Business Analytics	• Blockchain Technology
• E-Commerce	• Edge Computing	• Software Analytics	• Social Network Security
• E-Participation	• Fog Computing	• Medical Informatics	• Cyber Security
• Crowd Sourcing	• Wireless Sensor Network	• Deep Learning	• Intrusion Detection System
• Social Network		• Machine Learning	

Important Dates:

Last date of Submission: 31st October 2019

Date of Notification: 30th November 2019

Camera Ready Submission & Registration: 15th December 2019

Sd/-
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CSI2020

53rd Annual Convention of
Computer Society of India™
@ KiiT, Bhubaneswar, Odisha
(16-18 January, 2020)

CSI is holding its 53rd Annual International Convention CSI-2020 in Bhubaneswar (at world renowned University - KiiT, Bhubaneswar, Odisha, India) from 16-18 January, 2020. More than 1000 IT Professionals and Students from all over India and abroad are expected to participate. The theme of the Convention is "Digital Democracy - IT for Change".

Theme: Digital Democracy - IT for Change

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CSI2020 convention BHUBANESWAR

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