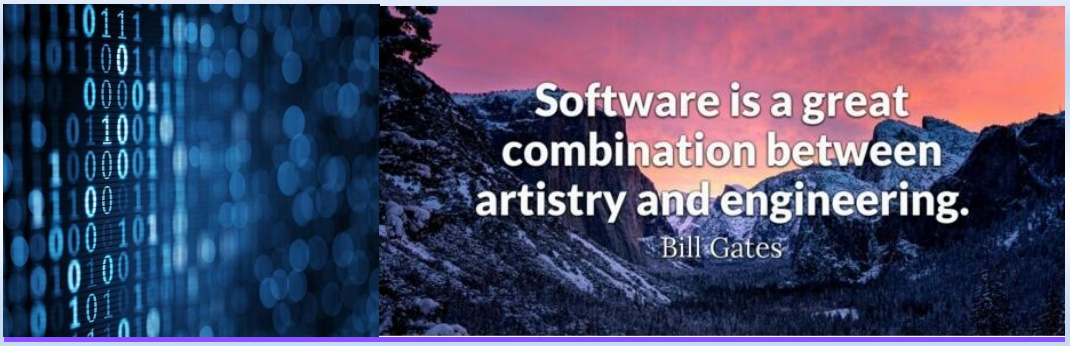
BHILAI INSTITUTE OF TECHNOLOGY, RAIPUR
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

TREK THE TECH



Blockchain and Big Data – How the future of analytics is evolving?

Big Data has been around for a while and blockchain technology currently rides the hype wave. What results can the concoction of these two innovations produce? There is a drive to adopt big data within organizations which has triggered the use of big data analysis tremendously in the past few years. Hence, businesses are also rapidly catching on to what they need for it. The blockchain is a decentralized ledger of transactions, where every network participant validates the transaction so that the data stored is immutable and cannot be forged. Using blockchain adds another data layer to the Big Data analytics process.

Most importantly, this data layer complies with 2 main demands of the Big Data analysis:

- Blockchain-generated Big Data is secure, as it cannot be forged due to the network architecture.
- Blockchain-based Big Data is valuable, meaning it is structured, abundant and complete, making it a perfect source for further analysis.

Big data and data science/analytics: present challenges

The rise of Big Data has presented a slew of issues for both big businesses and everyday consumers. Some major problems to data management and analytics include so-called dirty data, inaccessible data, and privacy issues. And as Big Data increases in size and the web of connected devices explodes, it exposes more of companies data to potential security breaches. For most, however, the data silos are still a major issue and a full company-wide digital transformation is still more concept that reality.

What may Blockchain bring?

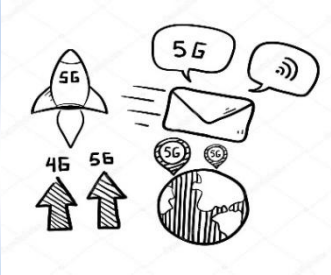
Decentralized : The biggest advantage of blockchain is that it is decentralized.
Distributed: Blockchain is a distributed database or ledger system that records economic transactions such that they cannot be manipulated.
Immutable: Furthermore, validated data generated via blockchain technology comes structured and complete plus the fact it is immutable.

Where Blockchain can help Big Data?

Blockchains will give you greater confidence in the integrity of the data you see. Immutable entries, consensus-driven timestamping, audit trails, and certainty about the origin of data (e.g. a sensor or a kiosk) are all areas where you will see improvement as blockchain technology becomes more mainstream. Using the Blockchain technology for storing Big Data can be cost saving for companies. Blockchain can be an efficient mode for online data storage. In addition to this, the decentralized network can grant access to many users.Performing analysis on data becomes much more efficient and easier. Using the Blockchain technology can also help fraud detection. Blockchain provides an exceptional framework to get structured data from devices and individuals. This helps data scientists working on predictive analysis to focus their attention on algorithms and predictions.

Dr. Padmavati Shrivastava
Assistant Professor, CSE

India's Future – 5G Network



What is 5G network?

5G network is fifth generation cellular technology. Its main focus is to increase internet speed and improve several wireless services. 5G is meant to enhance the digital experience using ML (machine leaning) based automation. It is assumed that 40% of globe will be covered with 5G networks by 2024. At present, it's only available in certain countries and in some area.

In India, 5G network is considered important because our country is still only 34.93% urbanized. And to take India into global market every citizen must be part of technology. Keeping huge population on focus, it is being discussed that for forthcoming 5G network; everything will be India's technology. Reliance jio and Airtel are diligently developing 5G network with several undertaking trials. Mostly Indian companies will collaborate for trial and error. With 5G, IOt (internet of things) will gain another peak.

5G Future Concerns

It's been claimed that once this network will be effectively in use, its radiofrequency radiation will harm the environment. Several heath damage like skin cancer, disruption of cell metabolism and premature aging will take place.

Priya Pudke- 6th sem (CSE)

Faculty Achievements

- Prof. O.P. Barapatre attended one week Faculty Development Program on "Examination Reforms" conducted by IQAC, Bhilai Institute of Technology Durg Chhattisgarh under AICTE Margdarshan Scheme from 8th March 2021-13th March 2021.
- Prof. O.P. Barapatre attended AICTE Teaching and Learning Academy(ATAL) workshop on "Artificial Intelligence" organized by Sri Jayachamareajendra College of Engineering from 27-1-2021 to 31-1-2021.
- Prof. O.P. Barapatre attended AICTE Teaching and Learning Academy(ATAL) workshop on "Internet of Things (IoT)" at Gandhi Institute of Technology and Managementfrom 4-1-2021 to 8-1-2021
- Prof. O.P. Barapatre attended AICTE Teaching and Learning Academy(ATAL) workshop on "Data Science" at Amal Jyothi College of Engineering from 11-1-2021 to 15-1-2021.
- Prof. Seira Shinde registered as well as published an Indian patent on Iot Based Smart Home Security System: Published on 19/03/2021
- Prof. Seira Shinde registered as well as published an Indian patent on Artificial Intelligence Based Augmented Reality Devicefor Blind People To Distinguish And Identify Colors: Published on 05/02/2021
- Prof. Seira Shinde has given her valuable contribution as organizing member of Webinar on "Women Mental Health- Workplace Mental Health and Wellbeing" organized on 24th March 2021 at BIT, Raipur(C.G.) sponsored by National Commission for Women, New Delhi.
- Prof. Seira Shinde attended National workshop on "Cyber Crimer awareness" at Shri Rawatpura Sarkar University, Raipur (C.G.) on 19/2/2021
- Dr. Padmavati Shrivastava was the Convenor of One Day National Webinar on "Women Mental Health- Workplace Mental Health and Wellbeing" organized at BIT, Raipur and sponsored by National Commission for Women, New Delhi on 24th March 2021.
- Dr. Padmavati Shrivastava published an Indian Patent- "Intelligent Mobility Robotic Device For Locomotion Of Physically Challenged People" - 202141008444 Publication Date (U/S 11A) - 05/03/2021
- Dr. Padmavati Shrivastava completed AICTE Training And Learning (ATAL) Academy Online FDP on 'Blockchain' from 04-01-2021 to 08-01-2021 organized by Noida Institute of Engineering & Technology, Greater Noida
- Dr. Padmavati Shrivastava completed AICTE Training And Learning (ATAL) Academy Online FDP on 'Blockchain' from 11-01-2021 to 15-01-2021 organized by IIT,Ropar
- Dr. Padmavati Shrivastava completed AICTE Training And Learning (ATAL) Academy Online FDP on 'data Sciences' from 18-01-2021 to 22-01-2021 organized by SAINTGITS College of Engineering
- Dr. Padmavati Shrivastava published an Article: "An Analytical Study of Feature Extraction Techniques For Student Sentiment Analysis." In Turkish Journal of Computer and Mathematics Education Vol.12 No. 11 (2021), 2900- 2908, ISSN: 1309-4653 Scopus Indexed
- Prof. Syed Zishan Ali published a paper on Advanced Smart Lock System for Multi User Environment Using Nvidia Jetson Nano, Annals of the Romanian Society for Cell Biology, 6930
- Prof. Syed Zishan Ali published a paper comprehensive study on online MCQ examination, International Research Journal Of Modernization In Engineering Technology And Science, e-ISSN: 2582-5208
- Prof. Amit Thakur attended AICTE sponsored One-week Faculty Development Program on "Data Sciences" organized by Gandhi Institute of Technology and Management from 4th January to 8th January 2021.
- Prof. Amit Thakur attended AICTE sponsored One-week Faculty Development Program on "Examination Reforms" organized by IQAC, Bhilai Institute of Technology, Durg under AICTE Margdarshan Scheme from 08 March to 13 March 2021.
- Prof. Amit Thakur Published paper on Online Education System, Volume -09 ISSUE-03 in International Journal for Scientific Research & Development , ISSN (online): 2321-0613
- Prof. Amit Thakur published paper on Covid - 19 Forecasting & Prediction Using Machine Learning , Volume -02, Issue-09,International Journal for Scientific Research & Development ISSN (online): 2321-0613
- Prof. Amit Thakur attended One Day online Webinar on "Intellectual Property Rights" organized by Entrepreneurship Cell, Bhilai Institute of Technology, Raipur on 25 March 2021.
- Prof. Amit Thakur published Patent on "Artificial Intelligence Based Tongue Controlled Wheelchair for Paralyzed Patients" , Application No: 202141003285, Publication Date: 29/01/2021
- Prof. Shashi Kant Mishra registered as well as published national patent on "IOT Based Smart Home Security System" in March 2021.

- Prof. Shashi Kant Mishra registered as well as published national patent on "Artificial Intelligence based Tongue Controlled Wheelchair for Paralyzed Patients" in January 2021.
- Prof. Shashi Kant Mishra Attended AICTE sponsored AICTE Teaching and Learning Academy(ATAL) workshop Titled "Big Data Analytics" at Siddhartha Institute of Engineering & Technology from 25-1-2021 to 29-1-2021.
- Prof. Shashi Kant Mishra Attended AICTE sponsored AICTE Teaching and Learning Academy(ATAL) workshop Titled "Blockchain" at JSS Academy of Technical Education from 18-1-2021 to 22-1-2021.
- Prof. Shashi Kant Mishra Attended AICTE sponsored AICTE Teaching and Learning Academy(ATAL) workshop Titled "Internet of Things (IoT)" at P.S.R. Engineering College from 04-1-2021 to 08-1-2021.

Students' Accolades

- Students shortlisted for final round of Chhatra Vishwakarma award 2020
  Group 1 : Abhinav Prasad Tiwari (7th CSE), Abhishek Kashyap (7th CSE),
  Ketan Sushil Zode (7th CSE) guided by Prof. Syed Zishan Ali
  Group 2 :Aditya Panda (7th CSE) , Madhavi Singh (7th CSE) guided by Prof. Seira Shinde
  Group 3: Swapnil Dange (7th CSE) , Shankar Burman (7th CSE), Rahul Deodas (7th CSE) guided by Prof. Sana Tak

INTERNET OF THINGS

The network of physical objects that are embedded with softwares, sensors, and other technologies which are used for the exchange of data are the "Internet of things". Nowadays, IoT devices are being used everywhere, whether it is industrial purposes or medical purposes to treat chronic diseases like cancer or aids, etc. Homes are also converting to "smart homes". There will no doubt if we say this is the "era of IoT".
Privacy and security are the sensitive areas which are affected very much by this in both positive and negative ways. All the cyber crimes have come into force using these technologies. The high security system can also be given using these IoT. Internet of things can let us see the bright side of technologies, if we use them correctly and legally.

Drishti Yadav- 6th sem (CSE)

Latest Computer Science trends (2021-2025) to look out for

Here are the 7 fastest-growing computer science trends happening right now (in 2021). And how these technologies are challenging the status quo in the office and on college campuses.

1. Quantum Computing Makes Waves

Quantum computing is the use of quantum mechanics, such as entanglement and superposition, to perform computations. It uses quantum bits (qubits) in a similar way that regular computers use bits. Quantum computers have the potential to solve problems that would take the world's most powerful supercomputers millions of years.

2. Zero Trust Becomes The Norm

Zero Trust information security models aim to prevent the potential vulnerability of trust authentication methods (like passwords).

3. Cloud Computing Hits The Edge

Gartner estimates that 80% of enterprises will shut down their traditional data centers by 2025. Network latency is one downside of traditional cloud computing. This is why many companies are moving over to edge computing service providers instead.

4. Kotlin Overtakes Java

Kotlin is a general-purpose programming language that first appeared in 2011. It's designed specifically to be a more concise and streamlined version of Java. Since Kotlin offers big advantages over Java, we can expect more and more programmers to make the switch between 2021 and 2025.

5. The Web Becomes More Standardized

The OpenAPI Specification (OAS) makes web more standardized. It's essentially a description format for REST APIs.

6. More Digital Twins

A digital twin is a software representation of a real-world entity or process, from which you can generate and analyze simulation data.

This way you can improve efficiency and avoid problems before devices are even built and deployed.

7. Demand For Cybersecurity Expertise Skyrockets

According to CNET, at least 7.9 billion records (including credit card numbers, home addresses and phone numbers) were exposed through data breaches in 2019 alone. As a consequence, large numbers of companies seek cybersecurity expertise to protect themselves. And software that helps people to identify if they've had their credentials compromised by data breaches will also trend.

Here is the list of the top 9 new and trending technologies:

- Artificial Intelligence (AI) and Machine Learning
- Robotic Process Automation (RPA)
- Edge Computing
- Quantum Computing
- Virtual Reality and Augmented Reality
- Blockchain
- Internet of Things (IoT)
- 5G and Cyber Security