



# SRMS

June 2023

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CAMPUS-ANVESHAN

College of  
Engineering,  
Technology & Research



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*Data is a precious thing  
and will last longer than  
the systems themselves.*

Tim Berners Lee  
The inventor of the World Wide Web

Born:  
June 8, 1955  
(Age 68)



### Principal's Desk

The major challenge for today's engineering educational institutions is to accommodate the ever-varying aspirations of the younger generation because of increasingly changing demand & development in industries. SRMS College of Engineering, Technology & Research is one among reputed technical institutes importing the finest quality education. It is supplemented by on-going and regular interaction with business and industry leaders, providing the student a practical platform to assess and experience the application and effective results of what is taught as concept in their classroom.

As Swami Vivekananda said, "Arise! Awake! and stop not until the goal is reached", we provide an environment and focus on each student & try to bring out the best from them by exploring their hidden talent and skills in multiple fields by encouraging them to participate in co-curricular & extracurricular activities.

My core team of faculty members strive to focus on every student, monitor & mentor them, appreciate their achievements and encourage them to overcome their shortcomings. We have an Entrepreneurship Development cell to inculcate research culture & enterprising skills among students & faculty.

I am sure that our students will continue their stellar performance during their course thereby setting the standard for excellence. With all the laurels we have achieved till date, I am sure we will keep providing a gamut of professional Engineers & Technocrats, backed by top most professional services.

**Dr. L. S. Maurya**  
Principal

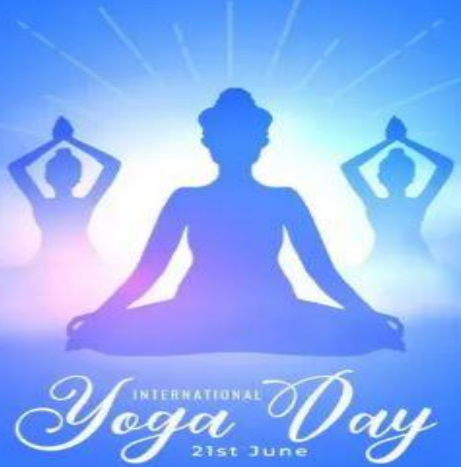
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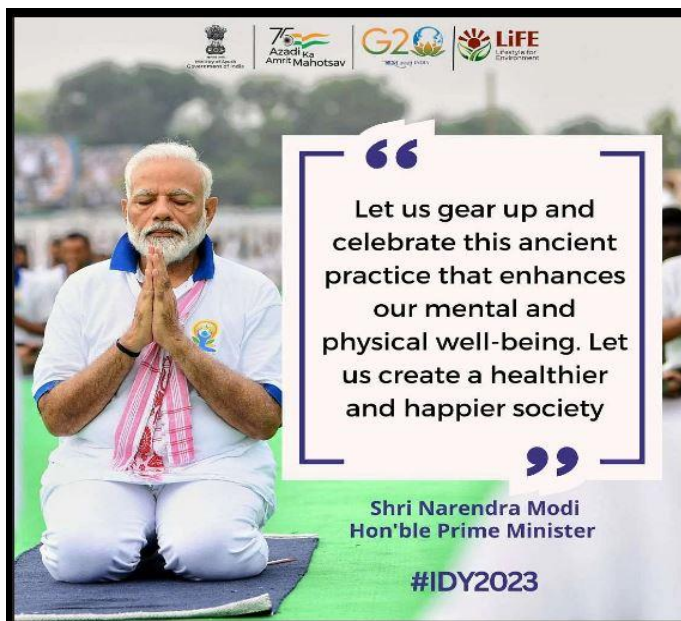
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# YOGA DAY



## International Yoga Day 2023 Theme, Significance, Benefits

International Yoga Day is celebrated annually on June 21st to spread awareness about the benefits of yoga and meditation worldwide. For the year 2023, the 9th year of International Yoga Day, the theme "**Yoga For Vasudaiva Kutumbakam**" has been selected, highlighting the message of One Earth, One Family, and One Future. Prime Minister Narendra Modi, who proposed the concept of Yoga Day, lead a yoga session from the UN headquarters on June 21, 2023.



**Shri Ram Murti Smarak College Of Engineering,  
Technology & Research Bareilly  
Celebrated International Yoga Day & Ignited A  
Mindful Revolution**

With an aim to promote holistic well-being, International Yoga Day was observed at **SRMS College of Engineering, Technology & Research (CETR), Bareilly**

The event was a great success that saw **Dr LS Maurya, Principal CETR**, Faculty of various department, Staf members and Students.



# WORLD ENVIRONMENT DAY



## World Environment Day

World Environment Day is observed annually on June 05 to raise awareness about environmental protection and sustainability.

The United Nations Environment Programme (UNEP) proposed a special day for the environment in 1972, which was designated by the UN General Assembly.

This year, the theme of World Environment Day 2023 is "Beat Plastic Pollution," highlighting people's actions toward plastic pollution reduction.

The day encourages individuals, governments, and international bodies to prioritize eco-friendly practices for a greener world and the protection of the environment.

### Plastic is made from fossil fuels

Theme 2023

## Beat Plastic Pollution



A call for taking decisive action to combat one of the most pressing environmental concerns of this era and alert the world to the dangers that plastic pollution poses to human health and all forms of life on Earth.

World Environment Day 5<sup>th</sup> June

The more plastic we produce, the more fossil fuel we burn, and the worse we make the climate crisis. But we have solutions,” UN Secretary-General António Guterres said in his World Environment Day message.

“We must work as one – governments, companies, and consumers alike – to break our addiction to plastics, champion zero waste, and build a truly circular economy.”

World Environment Day 5 June, celebrated in **Shri Ram Murti Smarak College of Engineering, Technology & Research Bareilly**



# WORLD BLOOD DONOR DAY



## World Blood Donor Day

World Blood Donor Day is celebrated on 14 June every year to spread awareness and seek attention to the importance of blood donation. It is important that people are educated on the importance of safe blood donation and blood products for the purpose of transfusion.

The day also celebrates and honours the contribution of voluntary and unpaid blood donors.

### THEME

The slogan for the 2023 World Blood Donor Day campaign was “Give blood, give plasma, share life, share often.” It aimed to make people aware of the patients who need life-long transfusion support and highlighted the role of every single person in the donation of valuable gifts of blood or plasma.



## SRMS Hospital & Its Medical Institution's World Blood Donor Day Celebrations Strikes Success with An Array of Engaging Activities

With a selfless & humanitarian act of compassion that can save lives and make a significant impact on the well-being of everyone, SRMS Institute of Medical Sciences (IMS), Bareilly in association with Department of Transfusion Medicine & Department of Community Medicine at SRMS IMS observed WORLD BLOOD DONOR DAY on June 14, 2023 at SRMS IMS, SRMS Goodlife Hospital and SRMS College of Nursing, Bareilly with an array of activities, highlighting the importance of voluntary blood donation in support of health and welfare of individuals in need.

With an inspiring theme ‘Give blood, give plasma, share life, share often’, the event began with welcome address by Anupriya, BSc Nursing 3rd semester student, followed by PPT presentation on importance, purpose, advantages of blood donation and precautions to be taken during blood transfusion, including a role play by GNM 2nd year students. The five-day activities had awareness talks on ‘Voluntary Blood Donation: Facts and Myths’, which targeted rural & urban communities at the Rural Health Training Centre, Dhaura Tanda Village & Urban Health Training Centre, Bareilly.

In association with Bareilly's Nath Nagri Raktdan Sewa Trust & Giants Group, Voluntary Blood Donation Camps at Alakhnath Mandir & SRMS Goodlife collected about 51 units of blood. Later, Air Marshal Dr MS Butola, Principal SRMS IMS and Prof Rintu Chaturvedi, Principal SRMS College of Nursing shared valuable insights on blood donation and blood transfusion.

## INTERNET OF BEHAVIOR (IOB)

Internet of Behaviors (IoB) links human behavior to the digital world to provide services that meet humans' dynamic needs. IoB can observe and record human behaviors (physical and mental alike), analyze them, adapt itself accordingly, and continuously affect humans' decisions in implicit and explicit ways. A crucial point is understanding human individual and social behaviors, which are reactions to various internal or external events. For instance, intentions and emotions that cause specific behaviors could be analyzed and further impacted by stimuli toward different behaviors.

At the social level, people's social attachment to each other or their belongings could influence their behaviors. At the cultural level, behaviors could be impacted by expressiveness, mobility habits, social interactions, and privacy concerns of a country or region's population.

Therefore, while IoB opts to engineer intelligent connected systems adaptive to behaviors, it will only be effective with a deep behavioral analysis from social and psychological perspectives.

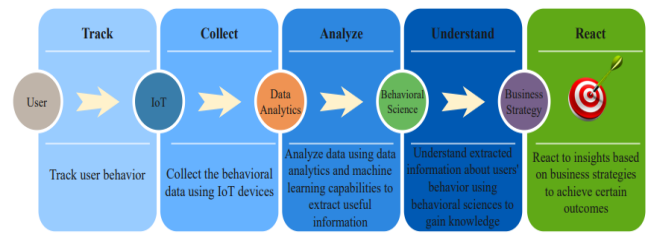
A novelty IoB provides is that it considers not only the direct users but also citizens, occupants, visitors, or customers who may not directly interact with the system and may mostly be unaware that they are part of the system but could benefit from the way the system works. The success of IoB depends on applicable dimensions regarding ethics, privacy, artificial intelligence (AI), and more.

IoB attempts to appropriately understand data and use this understanding to create new products, promote current products, redesign the value chain, increase profits, or reduce costs from a psychology perspective.

Therefore, user behavior in the IoB workflow will be tracked first using connected devices, as shown in fig below. The data generated by IoT devices will be collected and then analyzed using data analytics and machine learning algorithms. The analysis phase will yield useful information

that must be properly understood from a behavioral science perspective. Finally, the knowledge gained will be used to develop business strategies and influence the behavior of users, thus achieving a specific goal

## IoB Benefits

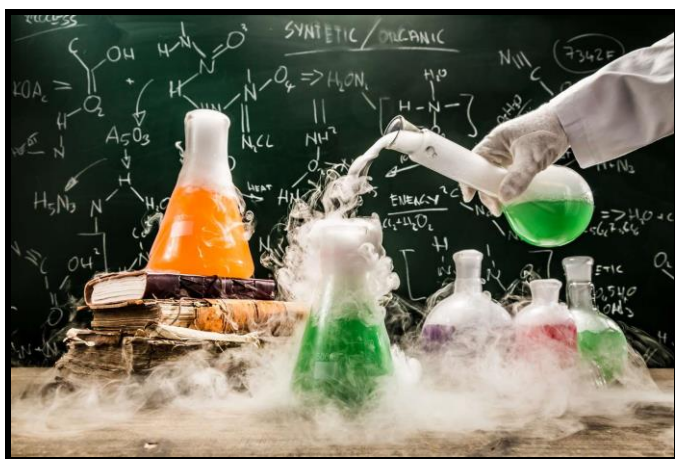


IoB is a very new concept in today's emerging technologies. It is being used in many applications for several benefits, however, without much knowledge about it in the research community. Therefore, in this sub-section, we summarize IoB benefits:

- **Quality of Experience, Increased Profit:** Help companies resolve issues in targeting more sales while keeping their customers satisfied at the same time (Win-Win strategy). For example, online fashion retailer apps can use the clicks and search history of users to suggest personalized discounts and offer packages.
- **Tasks Automation:** Help replace outdated fashion tactics like time-consuming and unfavourable customer surveys (No More Tedious Tasks).
- **Target Customers:** Give the opportunity to know the valuable customers based on their interest and which segment to target and invest more time with. For instance, the smartwatch company may find through tracked data that males aged 20-30 who do not exercise regularly are more likely to purchase its smartwatch to make themselves more committed to exercise.
- **Accuracy:** Give the ability to track and study the unobtainable behavior of how customers interact with products and services (Notice the Unnoticed).
- **Real-Time Interaction:** Help provide real-time interactions via notifications or alerts to customers about targeted offers, sales, and/or advertisements. For example, social media apps provide real-time feeds and ads based on viewing patterns, amount of time spent in one account, interest in specific content, or search and chat analysis.

*Pradeep Kumar*  
Assistant Professor  
CSE

## Chemistry inside a Computer



For the general public, the term “chemistry” might probably bring the picture of a person, in a white color lab-coat, working with some glass beakers filled with colorful solutions. This picture is mostly true for describing a 19th century chemist.

The present-day chemist works with far more advanced equipment than mere glass beakers and deals with quite complex processes rather than just mixing the solutions! To study a reaction.

Today’s chemist routinely uses various kinds of instruments such as spectroscopes/spectrometers (UV, IR, NMR, EPR, XRD, Mass spectrometer, etc.), microscopes (Scanning Electron Microscope, Transmission Electron Microscope, Scanning Tunneling Microscope, Atomic Force Microscope, etc.) and many others. Obviously, not every chemist uses all of these instruments nor does every chemical reaction require all of them.

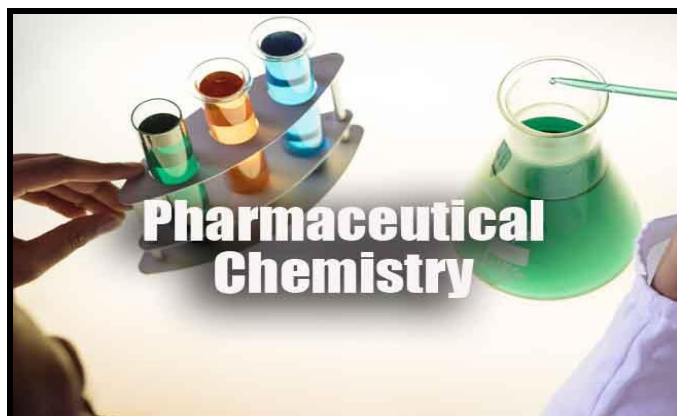
The specific instrument which a chemist uses regularly is determined by the experiments he/she is conducting, and thus, is completely field specific.

So, at a first glance, it might seem that there is no other new general instrument/material (like a lab-coat or a glass beaker) which connects all of the new generation chemists. However, if we look a little deeply, we will immediately find that every new generation chemist is connected to one specific instrument – a computer.

This is obviously true from the technological viewpoint because all the new generation chemists operate (or at least, interact with) most of their instruments through a computer, they plot their results using various computer software, they write their research articles on it, etc. But, as mentioned above, this is just a technological connection.

The branch, computational chemistry (CC) by itself is vast and it can be used to study all forms of matter, namely, solid, liquid, gas, and plasma. Also, it can be applied to study the matter in both static and dynamic situations. For example, CC can be used to study the properties of diamonds at very low temperatures (static) or to study the reaction of a molecule colliding with a surface (dynamic).

From the above discussion, the importance of performing calculations to predict the chemical nature of a system should be apparent to the reader. Indeed, due to the cost-effectiveness of using CC, various industries have been employing CC for different purposes.



For example, pharmaceutical industries use CC to screen many compounds to find the best possible drug molecules to bind a particular protein pocket or they screen several polymorphs of a particular drug molecule to find the most stable polymorphs at room temperature. Finally, I hope that next time when you think about a chemist, you will also add a computer to your imagination.

*Mohammad Kasim  
Assistant Professor  
Basic Science*

## Child Marriage: A Violation of Child Rights



The devastation of child marriage effectively ends a girl's childhood. How? Forced marriage robs a girl of her education and more, replacing lessons learned in the classroom with adult responsibilities, including forced pregnancy, well before she's ready.

This not only violates her rights, but risks her life, the lives of her children and the future of her community.

Tragically, about 40 million girls worldwide are currently married or in a union – and without our help, an estimated 150 million girls will be married in the next decade. **This is unacceptable.**

Yet these are some of today's tragic child marriage statistics:

- About 40 million girls ages 15-19 are currently married or in a union worldwide.
- Each year, some 12 million more girls will marry before reaching age 18 – and of those, 4 million are under age 15.
- By 2030, it's estimated that 150 million girls will lose their childhoods due to child marriage.

*Ankit Saxena*  
Lab Instructor  
(CS)



- 1 June** – World Milk Day
- 2 June** – Telangana Formation Day
- 3 June** - World Bicycle Day
- 5 June**- World Environment Day
- 7 June** – World Food Safety Day
- 8 June**- World Brain Tumour Day
- 8 June** - National Best Friend Day
- 10 June**- Doll Day (Second Saturday of June)
- 12 June** - World Day Against Child Labour
- 14 June** - World Blood Donor Day
- 15 June** - World Elder Abuse Awareness Day
- 18 June** - World Father's Day (3rd Sunday of June)
- 20 June**- Jagannath Rath Yatra
- 21 June** – International Yoga Day
- 22 June**- World Rainforest Day
- 23 June** - International Olympic Day
- 26 June** - International Day against Drug Abuse and Illicit Trafficking
- 30 June** - World Asteroid Day

*Umesh Kumar*  
Lab Instructor  
(CS)

## Machine Learning in Cybersecurity



Machine learning (ML) is a commonly used term across nearly every sector of IT today. And while ML has frequently been used to make sense of big data to improve business performance and processes and help make predictions, it has also proven priceless in other applications, including cybersecurity. This article will share reasons why ML has risen to such importance in cybersecurity, share some of the challenges of this particular application of the technology and describe the future that machine learning enables.

**Why Machine Learning Has Become Vital for Cybersecurity?**

Machine learning is all about training models to learn automatically from large amounts of data, and from the learning, a system can then identify trends, spot anomalies, make recommendations and ultimately execute actions. In order to address all the new security challenges that organizations face, there is a clear need for machine learning.

Only machine learning can address the increasing number of challenges in cybersecurity: scaling up security solutions, detecting unknown attacks and detecting advanced attacks, including polymorphic malware. Advanced malware can change forms to evade detection, and using a traditional signature-based approach makes it very difficult to detect such advanced attacks. ML turns out to be the best solution to combat it.

At last, when it comes to cyber security, machine learning and its toolset can be used to automate things.

Hence we can say that the knowledge of machine learning has lot of potential for the ones who wants to work in cyber security.

*Akshatra Gupta  
CSI 1<sup>st</sup> Year*

## The Intersection of Data Science and Machine Learning: Empowering the Future



In the era of big data, the convergence of data science and machine learning has revolutionized industries across the globe. As organizations strive to extract meaningful insights from vast volumes of data, data science techniques coupled with machine learning algorithms have emerged as powerful tools for turning raw information into valuable knowledge. This article explores the symbiotic relationship between data science and machine learning, highlighting their key concepts, applications, and the potential they hold for shaping the future.

### •Understanding Data Science:

Data science involves extracting knowledge and insights from data using a combination of statistical analysis, machine learning, and domain expertise. It encompasses various stages of the data lifecycle, including data collection, cleaning, exploration, modeling, and interpretation. Data scientists employ a wide array of techniques, tools, and programming languages to uncover patterns, predict outcomes, and make data-driven decisions.

### •Unveiling Machine Learning:

Machine learning, a subfield of artificial intelligence, enables computers to learn and make predictions without being explicitly programmed. It relies on algorithms that automatically discover patterns and relationships within data, allowing systems to improve their performance over time. Machine learning algorithms can be broadly categorized into supervised learning, unsupervised learning, and reinforcement learning, each serving different purposes and offering unique capabilities.



## •Leveraging Data Science and Machine Learning Together:

The combination of data science and machine learning unleashes immense potential for solving complex problems and generating actionable insights. Data scientists employ machine learning techniques to build predictive models that make accurate forecasts, classify data into meaningful categories, detect anomalies, and automate decision-making processes. Meanwhile, machine learning benefits from data science methodologies that ensure data quality, feature engineering, and the optimization of model performance.

## •Real-World Applications:

**a. Healthcare:** Data science and machine learning are transforming healthcare by enabling early disease detection, personalized treatment plans, and drug discovery through analysis of large-scale medical data.

**b. Finance:** Banks and financial institutions leverage data science and machine learning to detect fraudulent activities, predict market trends, and optimize investment strategies.

**c. Transportation:** The integration of data science and machine learning enables efficient route planning, traffic prediction, and the development of autonomous vehicles.

**d. Retail:** Data-driven recommendations, demand forecasting, and targeted marketing campaigns are made possible through the synergies between data science and machine learning in the retail sector.

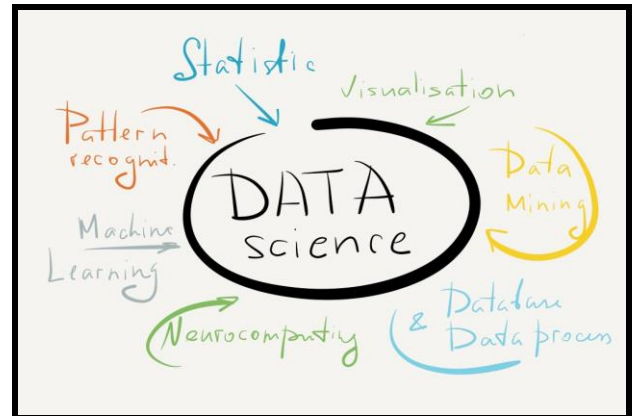
## • Ethical Considerations:

As data science and machine learning continue to shape the future, ethical considerations become paramount. Concerns such as privacy, bias, and transparency arise, necessitating responsible practices and robust regulatory frameworks to ensure fair and unbiased decision-making.

## •The Future Outlook:

The future of data science and machine learning holds tremendous promise. Advancements in areas like deep learning, natural language processing, and reinforcement learning are driving breakthroughs in fields such as robotics, healthcare, and artificial general intelligence. Additionally, the democratization of data science and machine learning tools empowers individuals and

organizations to harness their potential, leading to a data-driven revolution across industries



The fusion of data science and machine learning represents a paradigm shift in our ability to extract insights and drive innovation from data. By combining statistical analysis, computational power, and domain expertise, organizations can unlock the true value of data. As the world embraces this convergence, it is imperative to address ethical concerns and ensure that the transformative power of data science and machine learning benefits society as a whole.

*Sanjana Baldev  
CS2 1<sup>st</sup> Year*

## The Impact of Artificial Intelligence on Job Displacement



### Introduction:

Artificial Intelligence (AI) has rapidly advanced in recent years, revolutionizing various industries and transforming the way we live and work. While AI brings numerous benefits and opportunities, there is growing concern about its potential to automate tasks traditionally performed by humans, leading to

job displacement. In this article, we explore the implications of AI on employment and delve into the complex relationship between technology and the workforce.

## **The Rise of AI:**

Artificial Intelligence refers to the development of computer systems capable of performing tasks that typically require human intelligence, such as decision-making, problem-solving, and learning from experience. Machine Learning, a subset of AI, enables algorithms to improve their performance over time by analyzing large datasets. As AI algorithms become more sophisticated and capable, they are increasingly being deployed across various sectors, including manufacturing, transportation, customer service, healthcare, and finance.

## **Job Displacement:**

The advent of AI technology has sparked concerns about job displacement and its potential impact on the workforce. As AI systems become more proficient at performing repetitive and routine tasks, there is a real possibility that certain job roles may become obsolete. For instance, tasks that involve data entry, basic customer support, or even certain aspects of manufacturing could be automated with the help of AI-powered systems.

It is important to note that while AI may replace certain tasks, it is less likely to fully replace entire job roles. The human element remains crucial in many areas, such as complex decision-making, creative problem-solving, emotional intelligence, and interpersonal interactions. Therefore, the impact of AI on employment is complex and varies across industries and job functions.

## **Changing Work Landscape:**

As AI technologies continue to evolve, the work landscape is undergoing significant transformations. Some job roles may experience a decline in demand, while new job opportunities are created in areas such as AI development, data science, and AI-related fields. However, these new roles often require specialized skills and expertise, which may lead to a skills gap between the jobs eliminated and the jobs created. Consequently, individuals may need to adapt and acquire new skills to remain employable in the AI-driven economy.

## **Mitigating the Impact:**

To mitigate the potential negative effects of AI on employment, a multi-faceted approach is essential. Governments, educational institutions, and businesses need to collaborate to ensure that workers have access to training programs and resources that equip them with the skills needed for the changing job market. Upskilling and reskilling initiatives can help individuals transition into new roles and industries where human skills are in demand alongside AI technologies.

Furthermore, fostering a culture of lifelong learning can empower individuals to stay adaptable and embrace continuous skill development. Governments can play a crucial role in providing support mechanisms, such as social safety nets, to help workers affected by job displacement navigate through periods of transition.

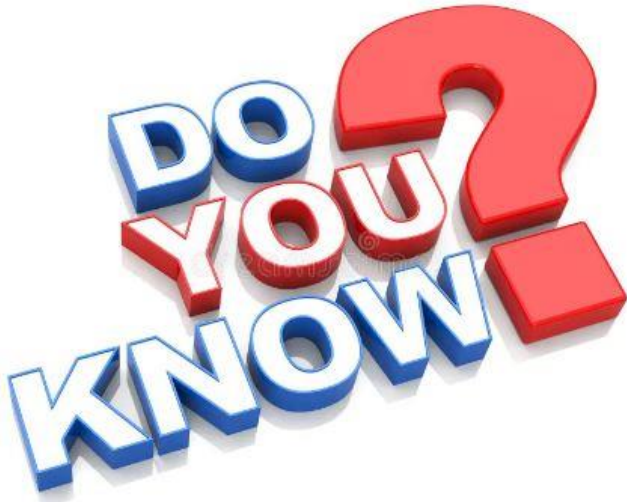
## **Collaboration between humans and AI:**

While concerns about job displacement persist, it is important to recognize that AI can also complement human abilities and enhance productivity. By automating mundane tasks, AI systems can free up human workers to focus on higher-value activities that require creativity, critical thinking, and innovation. The collaboration between humans and AI has the potential to drive economic growth and improve overall job quality.

## **Conclusion:**

Artificial Intelligence undoubtedly brings transformative changes to the job market, raising concerns about job displacement. However, the impact of AI on employment is nuanced, with certain tasks being automated while new opportunities emerge in AI-related fields. By investing in skill development, fostering collaboration between humans and AI, and adopting proactive policies, we can navigate the evolving work landscape and harness the potential of AI to create a more productive and inclusive society.

*Shivam Pandey*  
*CS 2<sup>nd</sup> Year*



1. What is the name of 'India's first Autonomous Navigation facility' inaugurated recently?

- [A]TiGer
- [B]TiHAN
- [C]Tushar
- [D]Trishit

Correct Answer: B [TiHAN]

2. Which is the parent company of DeepMind Technologies, that has developed 'AlphaFold' AI tool?

- [A]Microsoft
- [B]Alphabet
- [C]Meta
- [D]Apple

Correct Answer: B [Alphabet]

3. Which is the first country to approve a vaccine for Covid Omicron variant?

- [A]India
- [B]USA
- [C]UK
- [D]Italy

Hide Answer

Correct Answer: C [UK]

4. Artemis III is the crewed Moon landing mission of which country?

- [A]Japan
- [B]USA
- [C]UK
- [D] Australia

Hide Answer

Correct Answer: B [USA]

5. Which social media platform company has announced a new facility named 'Circles'?

- [A]Facebook
- [B]Twitter
- [C]Telegram
- [D]Instagram

Correct Answer: B [Twitter]

6. NROL-91, which was seen in the news, was launched by which country?

- [A]China
- [B]Russia
- [C]Israel
- [D]USA

Correct Answer: D [USA]

7. India has partnered with which US state for ZEV (zero-emission vehicles) Policy programme?

- [A]California
- [B]Massachusetts
- [C]Florida
- [D]Georgia

Correct Answer: A [California]

8. 'Optimus' is the prototype humanoid robot, launched by which company?

- [A]Apple
- [B]Tesla
- [C]Amazon
- [D]HP

Correct Answer: B [Tesla]

9. When was the 'Section 66A of the Information Technology Act' struck down?

- [A]2001
- [B]2005
- [C]2015
- [D]2021

Correct Answer: C [2015]

10. NaVIC, an equivalent of Global Positioning System (GPS), was developed by which country?

- [A]USA
- [B]India
- [C]China
- [D]Australia

Correct Answer: B [India]

*Mr. Arun Kumar Sahu  
Assistant Professor  
(CS Dept.)*

# HEALTH TIPS MONSOON

With the arrival of the monsoon comes the hope of rain, fresh beginnings, and a break from the summer's oppressive heat and humidity. However, not just people enjoy the rainy season. It is equally enjoyable for bacteria, viruses, plants, and mammals to be around. Health Tips so that you may enjoy the rainy season to the fullest and without falling sick:

- Drink clean water
- Make every effort to avoid mosquitoes
- Eliminate mosquito breeding areas
- Incorporate a disinfectant into the bathwater
- Fruits and vegetables should be thoroughly washed
- Get enough sleep
- Exercise regularly
- Wash or sanitize your hands properly before eating
- Take precautions to avoid allergies

## LOGIC PUZZLE

### The Puzzle:

You have three bags, each containing two marbles. Bag A contains two white marbles, Bag B contains two black marbles, and Bag C contains one white marble and one black marble.

You pick a random bag and take out one marble.

It is a white marble.

What is the probability that the remaining marble from the same bag is also white?

### Our Solution:

$\frac{2}{3}$  (not  $\frac{1}{2}$ )

You know that you do not have Bag B (two black marbles) so there are three possibilities

You chose Bag A, first white marble. The other marble will be white

You chose Bag A, second white marble. The other marble will be white

You chose Bag C, the white marble. The other marble will be black

So 2 out of 3 possibilities are white.

Why not  $\frac{1}{2}$ ? You are selecting marbles, not bags.

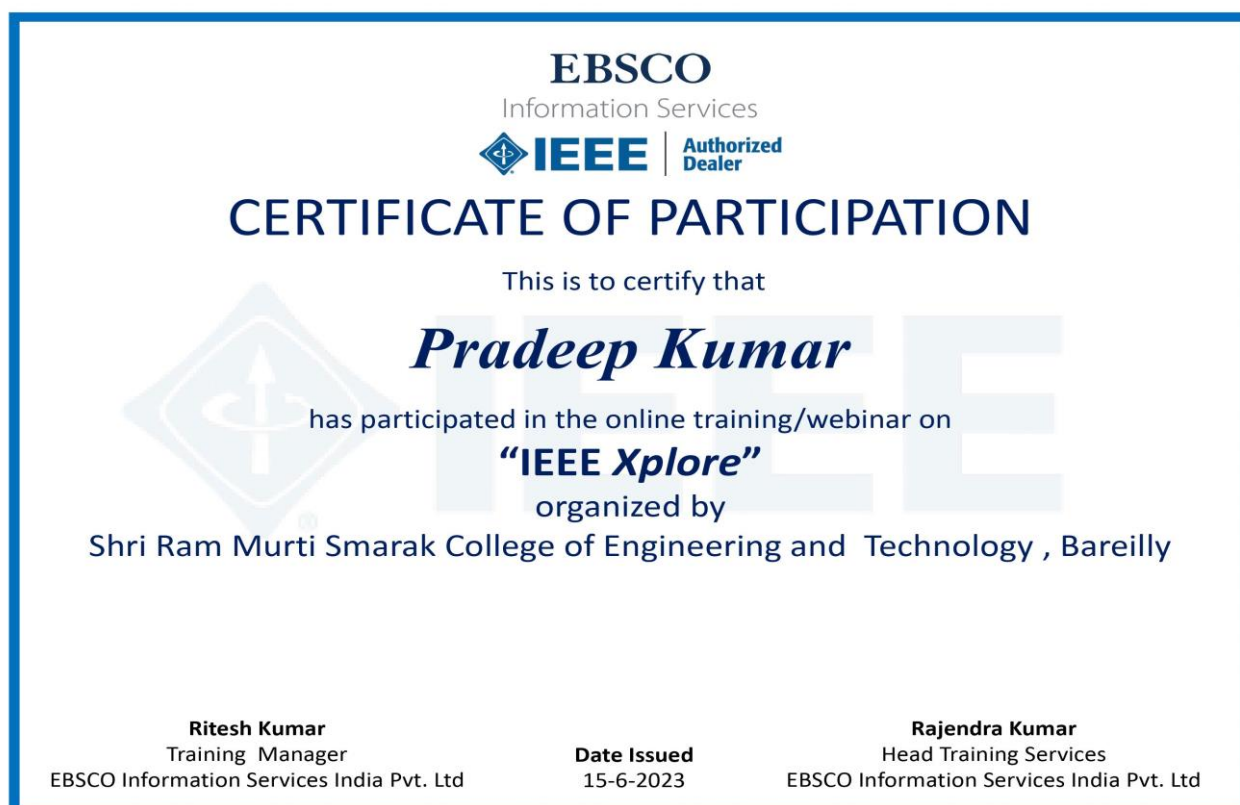
*Mr. Arun Kumar Sahu*

*Assistant Professor*

*(CS Dept.)*

# Faculty Achievements

A one-day online training / webinar was held on “IEEE Xplore” organised by SRMS College of Engineering & Technology, Bareilly in which many faculties participated including - Ms. Manvi Mishra (HOD CS Dept), Ms. Neha Sharma, Mr. Pradeep Kumar and many others.



## **THINK!!**

*Education helps us get exposure to new ideas and concepts that we can use to appreciate and improve the world around us and the world within us.*