



# AISSMS INSTITUTE OF INFORMATION TECHNOLOGY (IOIT)



ADDING VALUE TO ENGINEERING  
An Autonomous Institute Affiliated to Savitribai Phule Pune University  
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# वैश्विक 2023

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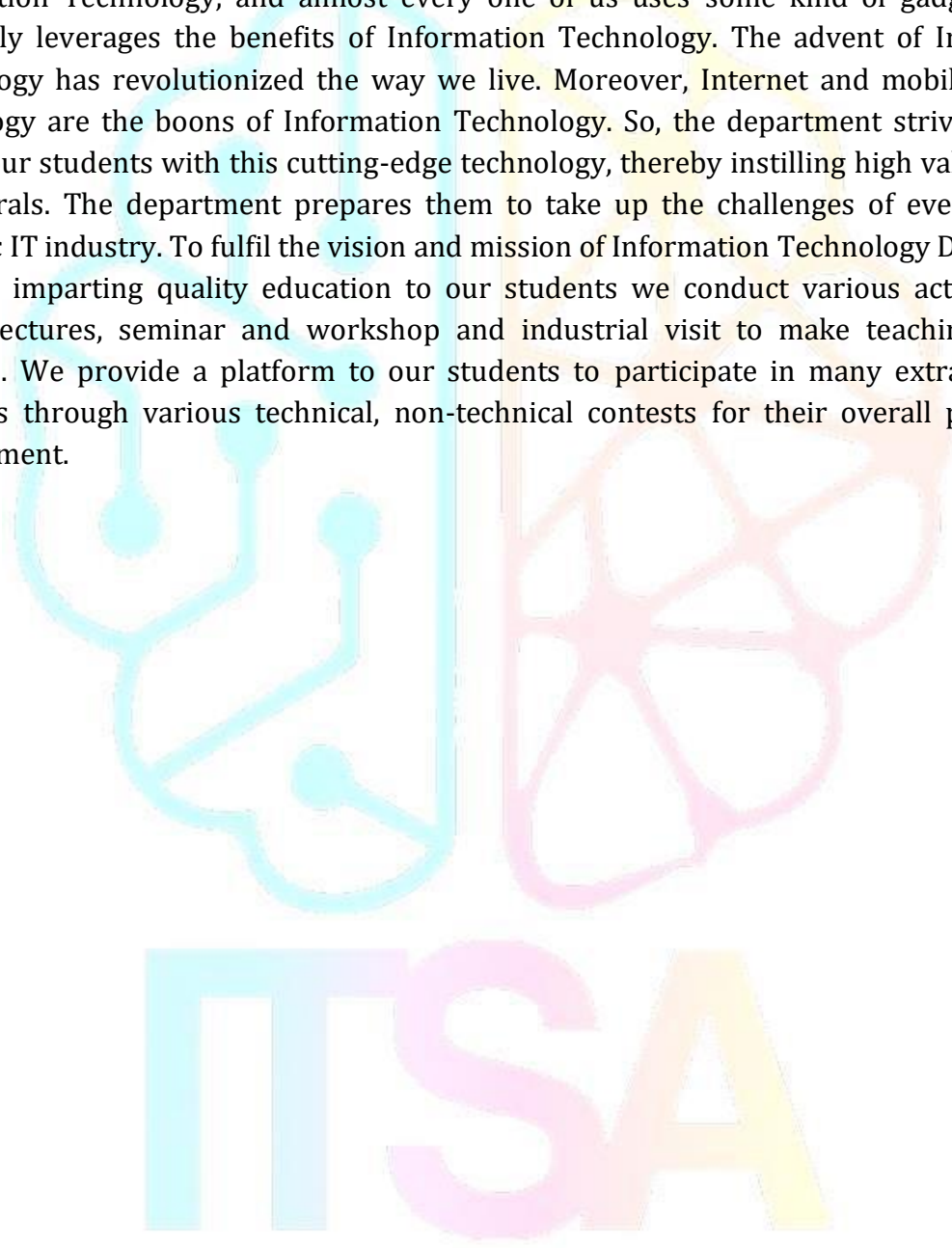
INTELLIGENCE



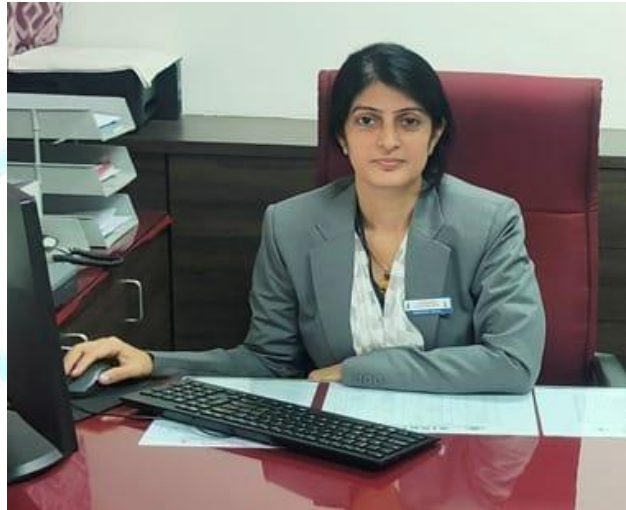
DEPARTMENT OF  
INFORMATION TECHNOLOGY

# DEPARTMENT OF INFORMATION TECHNOLOGY

Welcome to the Department of Information Technology. As we all know, this is an era of Information Technology, and almost every one of us uses some kind of gadgets which invariably leverages the benefits of Information Technology. The advent of Information Technology has revolutionized the way we live. Moreover, Internet and mobile wireless technology are the boons of Information Technology. So, the department strives hard to groom our students with this cutting-edge technology, thereby instilling high valued ethics and morals. The department prepares them to take up the challenges of ever-changing dynamic IT industry. To fulfil the vision and mission of Information Technology Department towards imparting quality education to our students we conduct various activities like expert lectures, seminar and workshop and industrial visit to make teaching process effective. We provide a platform to our students to participate in many extracurricular activities through various technical, non-technical contests for their overall personality development.



## MESSAGE FROM HOD



It is a great privilege and immense honor to inform you that the Department of Information Technology is publishing its 10<sup>th</sup> Annual Technical Magazine “**Taksh 2023**”. It is reflection of student’s hidden talents, skills and caliber. This magazine certainly would induce the young engineers to promote their creativity in approaching things differently. Through this magazine, students can convey inspirational articles, vibrant drawings, mind-scintillating poems and updates related to current trends to others. All these things have been made possible by the extraordinary vision of **Shri Malojiraje Chhatrapati**, Hon. Secretary, All India Shri Shivaji Memorial Society and the immaculate planning of **Dr. P. B. Mane**, Principal, All India Shri Shivaji Memorial Society Institute of Information Technology. I take this opportunity to congratulate the chief editor Mrs. Reshma. Y. Totare for bringing out this magazine as per schedule, which in itself is an achievement considering the effort and time required. I would like to thank all editorial team members for providing students a platform for creative thoughts and knowledge expansion. I express my considerable appreciation to all the authors of the articles in this magazine. I express my gratitude to all for their involvement, encouragement, support and guidance.

**Dr. Meenakshi. A. Thakor**  
**HOD, I.T Department**  
**AISSMS IOIT, Pune**



## MESSAGE FROM STAFF EDITOR-IN-CHIEF



It gives me immense pleasure as our Department of Information Technology presents the 10<sup>th</sup> consecutive edition of our department's annual technical magazine "Taksh 2023" to our dear readers. This year we are showcasing innovative ideas and hidden talents of our young minds. The magazine's objective is to provide a platform for our students to augment with its technology focus and scope. The technical section of this magazine elaborates the advancement in the field of technology in India.

I want to express my heartfelt appreciation on behalf of the entire magazine team. I am deeply grateful to our esteemed Principal, Dr. P.B. Mane, for entrusting me with the role of editor for this magazine. I also wish to take this moment to extend my thanks to our Head of Department, Dr. M.A. Thalor, for her unwavering support and invaluable guidance. I'd like to offer a special acknowledgment to our dedicated editorial team for their outstanding teamwork and relentless efforts, which played a pivotal role in the successful compilation of this magazine. I invite you to browse through these pages for an inspiring and encouraging journey filled with insightful readings.

**-Mrs. Reshma Yogesh Totare**  
**Chief Editor and Magazine coordinator**  
**Assistant Professor**

# ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S INSTITUTE OF INFORMATION TECHNOLOGY

## Department of Information Technology

### VISION

To be a leader in preparing technically competent and skillful IT Graduates to address the needs of industry and society.

### MISSION

1. To prepare students for employment/entrepreneurship/higher studies through curricular, extracurricular and extension activities.
2. To promote research and professional activities through industry involvement and professional bodies
3. To instill professional ethics and lifelong learning skills with concern for the society.

### PROGRAM EDUCATIONAL OBJECTIVE

#### Graduates will

1. Excel in diverse career paths with core professional skills.
2. Engage in multi domain research/professional activities
3. Cater to the needs of society with IT solutions/applications.

### PROGRAM SPECIFIC OUTCOMES

#### Graduates will be able to

1. Use database, networking and programming technologies for solving real life problems
2. Develop applications in the field of computing, networking, security and analytics.

### PROGRAM OUTCOMES

#### Graduates will be able to

1. Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. **[Engineering knowledge]**
2. Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. **[Problem analysis]**
3. Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. **[Design/development of solutions]**
4. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. **[Conduct investigations of complex problems]**
5. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. **[Modern tool usage]**

6. Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. **[The engineer and society]**
7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. **[Environment and sustainability]**
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. **[Ethics]**
9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. **[Individual and team work]**
10. Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. **[Communication]**
11. Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. **[Project management and finance]**
12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. **[Life-long learning]**

## MESSAGE FROM EDITORIAL TEAM



It gives us immense joy and satisfaction to finally introduce our very own departmental technical magazine “**Taksh-2023**”. Just like the Gods churned the ocean of the milk to extract the nectar, we have tried to churn out creativity from this mess of technology. A lot of effort has gone into making of this magazine. We hope you enjoy reading the magazine. The best thing about this magazine is that it represents the creative side of IT students to a fair degree-something that we think we all need to connect with. So, this time we have made an attempt to bring out the talent concealed within our student community. This magazine includes articles on what advancement India has done in the field of technology, I.T sector and many new latest technologies. We hope you enjoy reading this magazine as we have enjoyed making it.

### **Editorial Team**

- 1. Ankita Giri**
- 2. Mehul Pawar**
- 3. Dnyaneshwari Kondhalkar**
- 4. Sana Naqvi**
- 5. Yash Chavhan**



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## ADVENT OF CLOUD COMPUTING

The advent of cloud computing has revolutionized the way businesses and individuals' access, store, and manage their data. Gone are the days of relying on physical storage devices and local servers to manage data. Now, with the help of cloud computing, data can be easily accessed and mapped from anywhere in the world through an internet connection. This technology not only offers greater flexibility and scalability but also has the potential to significantly reduce operational costs and enhance security.

However, in order to fully leverage the benefits of cloud computing, it is important for individuals and organizations to carefully evaluate their specific needs and choose the right cloud computing model and service provider. In this blog post, we will discuss the fundamentals of cloud computing and provide guidance on how to select the most appropriate model and service provider for your business or personal needs.

Before delving into the various cloud computing models and providers, it is essential to understand some basic terminology and concepts associated with this technology. Cloud computing refers to the on-demand delivery of computing resources such as storage, processing power and applications over the internet.

One of the key benefits of cloud computing is its ability to provide access to shared resources they consume, enabling them to optimize their costs and eliminate unnecessary expenses.

There are three primary service models in cloud computing, namely Infrastructure as a Service (**IaaS**), platform as a Service (**PaaS**), and Software as a Service (**SaaS**). These service models cater to different needs and requirements of businesses and individuals.

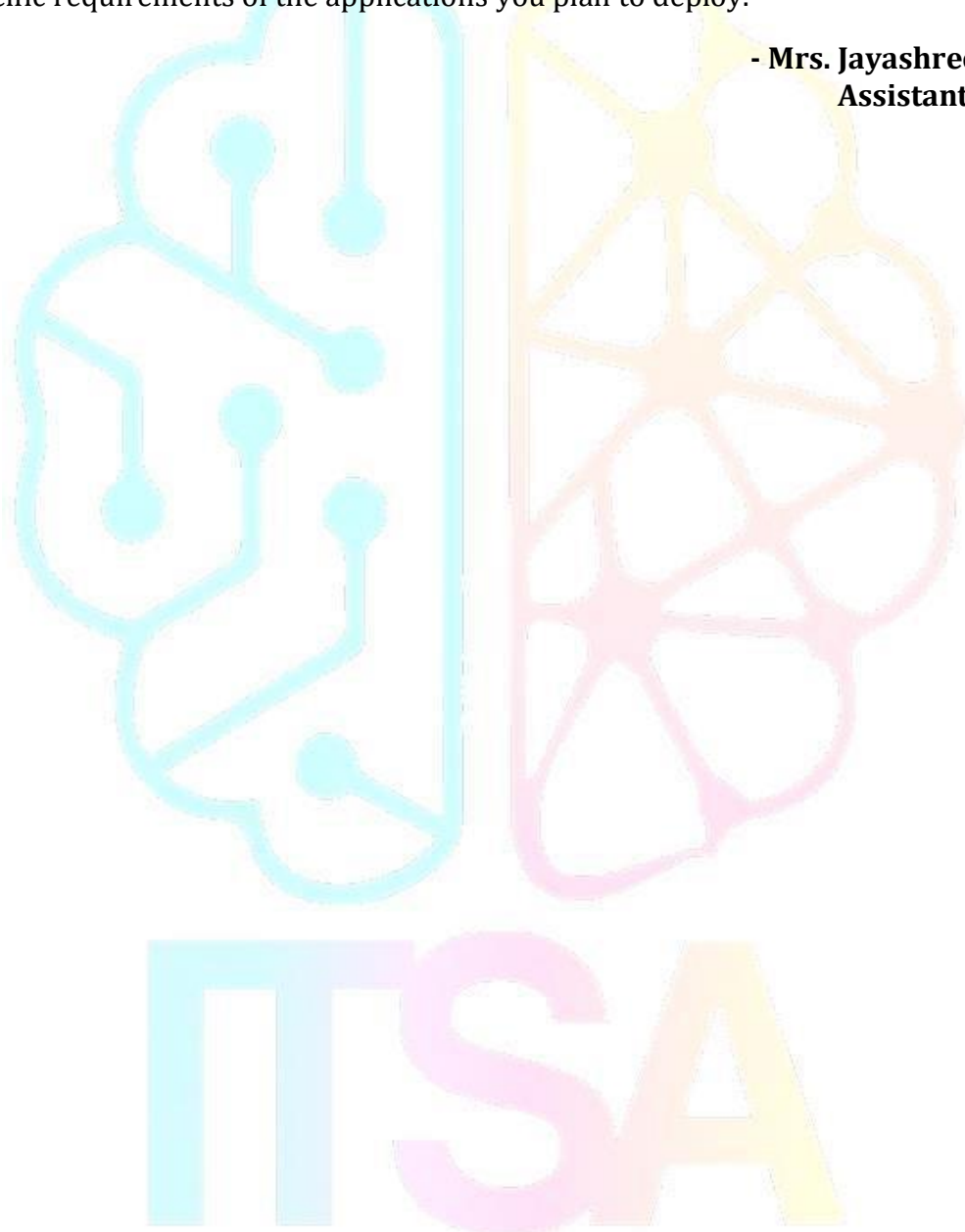
**IaaS** is ideal for businesses looking to build and manage their own applications and software, providing them with the necessary infrastructure components such as servers, storage and networking capabilities.

**PaaS**, on the other side, offers a more comprehensive solution that includes both infrastructure and developing tools, making it suitable for organizations looking to develop and deploy custom applications without worrying about managing the underlying infrastructure.

**SaaS**, provides users with access to pre-built software applications that are hosted on remote servers. These applications can be accessed through a web browser or mobile apps, and users pay only for the software they use.

Choosing the right cloud computing model depends on various factors, such as the size and nature of your organization, budget constraints, and technical expertise available in-house and specific requirements of the applications you plan to deploy.

**- Mrs. Jayashree Pasalkar  
Assistant Professor**

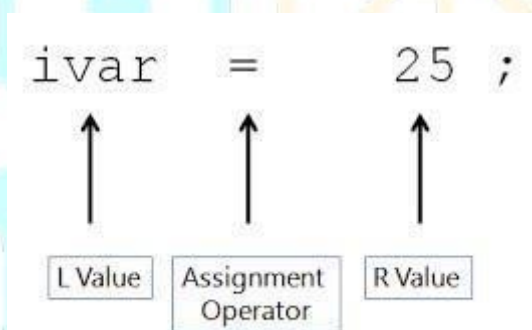


## LVALUE REQUIRED ERROR

It is a common error encountered while learning C/C++ programming. C++ compilers flag this error whenever the program tries to modify the constant values.

Constant in programming context can be defined as a value, that does not change during program execution. In programming, constants are literal values and can be classified integer, real, and character/s.

In programming, normally, when we define a mathematical expression, it has two components around assignment operator, one is the Lvalue and the other is Rvalue as shown in the image...



It is clear from the above expression that, the Lvalue is Left side component and Rvalue is the result of evaluation of right side component of an assignment (=).

Thus it can be concluded that, variables used in programming can be used as Lvalues as well as Rvalues, whereas constants are always Rvalues they can not be used as Lvalues. If we try to use a constant as an Rvalue, the compiler demands you to provide a Lvalue, as a constant cannot be modified.

for instance `int a,b; a=5;-----(1)`// here 'a' is Lvalue and 5 is Rvalue  
`b=a; -----(2)`// here 'b' is Lvalue and 'a' is Rvalue

Here we can notice that in equation (1) 'a' is used as Lvalue, and the same, is been used in equation(2) as Rvalue, So we say a variable can become Lvalue or Rvalue...

Let's say

```
#define SIZE 10 // this is how we define constants in C language, now SIZE is a constant
main()
{
    printf("%d\n", SIZE++);
}
```

This program is compiled with an error " Lvalue required", as we are trying to modify a constant.

SIZE++ is actually SIZE=SIZE+1 , here the constant is used as Rvalue, hence compiler raises an objection, that a constant cannot be modified.

Similarly there is another scenario where we get this error very commonly, can you Guess?

YES, you are right! It is when you try to modify base address of an array by it's NAME. In programming, the base address of an array by array-name is constant. It can be copied in some other variable and then can be modified.

Thanks for reading...

**- Mr. Riyaz Jamadar**

**Assistant Professor**



**ITSA**

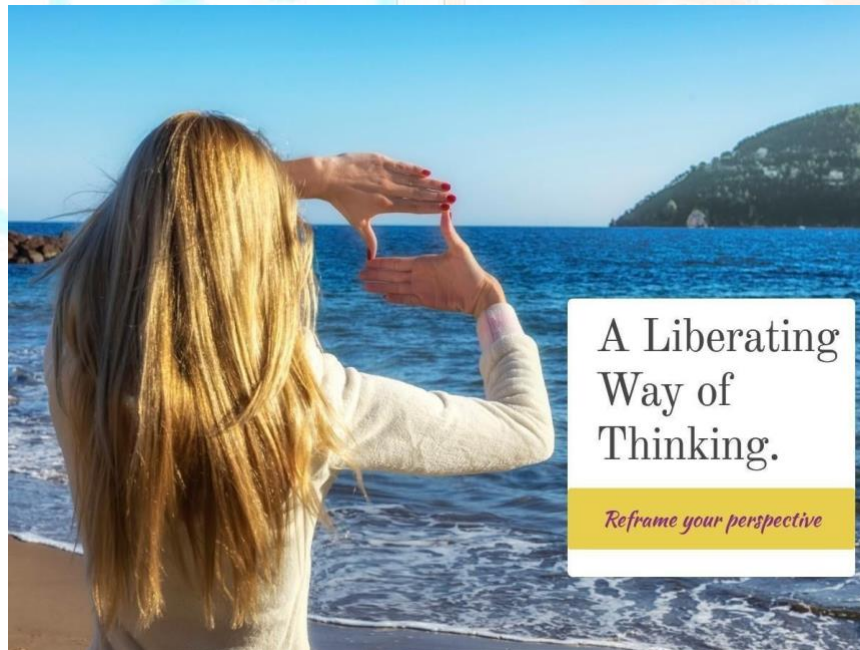


## THE LIBERATING POWER OF REFRAMING YOUR PERSPECTIVE

In every stage of life, we are presented with choices that determine how we are emotionally affected by events. It is not the events themselves that wield this influence; rather, it is our responses to these events that hold sway over our emotional well-being.

Reframing, in essence, is the art of actively selecting our responses. It calls for a deliberate decision to steer clear of regret and resentment, recognizing that regardless of the circumstances, we always possess the agency to choose our path. The pivotal question is whether we are in control of our own destinies, making choices that best serve us, or whether we are driven by external influences, overly reliant on the opinions and responses of others.

Our chosen responses define the impact an event has on us and shape our thoughts and feelings. Therefore, it is not the event itself or the actions of others that determine our emotional state; rather, it is our response to these factors that either grants us inner peace or subjects us to distress.



In the practice of reframing, we actively decide what meaning an event holds for us. Even in the face of adversity, we search for silver linings, focusing on the positive aspects of a situation. Instead of becoming victims of circumstance, we proactively seek ways to harness the situation to our advantage.

One can reframe a negative context with a positive perspective, uncovering the potential for personal growth, newfound strength, and resilience that can arise from challenging experiences. In doing so, we shift our focus away from denying reality and instead fully acknowledge it. We make a conscious choice regarding how we will respond to this reality, opting to either succumb to anger, self-pity, and upset or to channel our energies into

exploring the advantages within the situation and actively seeking ways to derive personal benefit from it.

The method of reframing may vary, but the desired outcome remains constant: transitioning from a blame-oriented mindset to one centered on embracing positive outcomes and happiness.

Reframing is not new. Many fables and fairy tales include behaviours that change their meaning when the frame changes.

Consider, for instance, the tale of the ugly duckling who, for the longest time, compared itself unfavorably to its fellow ducks. Ultimately, the realization of its true identity as a beautiful swan showcases the transformative power of reframing.

Reframing is inherently linked to creativity, as it involves taking ordinary events or objects and placing them in a new, useful, or enjoyable frame of reference. It is, without a doubt, a liberating way of thinking, empowering us to transcend limitations, find opportunities amidst challenges, and ultimately lead more fulfilling lives.

**- Mrs. Pragati Mahale  
Assistant Professor**

ITSA

## ChatGPT: Your AI Conversational Partner

ChatGPT, an artificial intelligence (AI)-powered chatbot developed by OpenAI, is creating a buzz across all occupational sectors. ChatGPT is part of a family of AI models that excel in natural language processing (NLP). Its most promising feature is ability to offer human-like responses to text input using deep learning techniques at a level far superior to any other AI model. Its rapid integration in various industries signals the public's burgeoning reliance on AI technology. This virtual conversational partner has garnered significant attention for its ability to generate coherent and contextually relevant responses.

ChatGPT contains 175 billion parameters, making it one of the largest and most powerful models for AI processing available today—hence its growing use in different occupations. ChatGPT's responses are leaps and bounds above those from past AI programs, in no small part due to being more human-like. ChatGPT has taken the business world by storm.

### Key Features:

*Conversational Prowess:* ChatGPT is designed to simulate human-like conversation, making it versatile in handling a myriad of questions, discussions, and interactions. Whether you seek information, entertainment, or companionship, ChatGPT is at your service.

*Knowledge at Your Fingertips:* Drawing from vast datasets and knowledge sources up to its last training cut-off in September 2021, ChatGPT is a treasure trove of information. It can provide explanations, facts, and explanations on a wide array of topics, from history and science to popular culture and current events.

*Language Comprehension:* ChatGPT is adept at understanding context and nuances in conversation, which allows for more engaging and coherent interactions. It can respond to multi-turn conversations, keeping the discussion flow natural and informative.

ChatGPT, like other advanced natural language processing models, has a wide range of applications across various industries and domains. Here are some notable applications of ChatGPT:

*Information Retrieval:* ChatGPT serves as an instant source of information, answering questions on a wide range of topics, from trivia to in-depth research inquiries.

*Content Generation:* It can assist in content creation, helping writers, marketers, and creatives brainstorm ideas, refine text, and even generate code or creative content.

*Domain-Specific Expertise:* Specialized versions of ChatGPT could emerge, tailored to specific industries or fields. These models would be trained on domain-specific knowledge and could serve as virtual assistants or experts in areas like medicine, law, finance, and more.

In summary, the ChatGPT and similar AI models has a wide range of applications, ethical considerations and responsible usage. Ensuring that AI models like ChatGPT are used in

ways that respect privacy, avoid bias, and adhere to relevant regulations and guidelines is crucial in harnessing their potential benefits across these various domains.

The future of ChatGPT and similar AI models is likely to involve continuous improvement in performance, increased versatility, better ethical safeguards, and broader adoption across various industries and applications. However, the specific direction will depend on research advancements, societal needs, and ethical considerations as AI technology evolves.



**- Dr. Mrunal Pathak  
Assistant Professor**

ITSA



# Cloud Computing: What are AWS, Azure, GCP and OCI?

In the past few years, cloud computing has changed the way businesses work by offering computer resources that can be easily adjusted, are adaptable, and cost less. Today, there are many companies that offer cloud services dominating the market. These include Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP), and Oracle Cloud Infrastructure (OCI). In this article, we will explain what AWS, Azure, GCP, and OCI are, their main features, and some of their use cases.

## Amazon Web Services (AWS)

Amazon Web Services (AWS) is a very well-liked company that offers a lot of services for using the internet. These services include being able to use a computer online, storing information, using databases, and connecting with others online. AWS started in 2006 and has grown quickly to become the biggest company that offers cloud services globally. AWS offers many different services, like Amazon EC2, Amazon S3, Amazon RDS, and Amazon CloudFront, among others. For instance, a company can use Amazon S3 to save lots of information, like pictures, videos, and files. The company can use Amazon CloudFront to send this content to people all over the world using a network.

## Microsoft Azure

Microsoft Azure is a well-liked company that provides cloud services. They offer many different services like computing, storing data, managing databases, and connecting networks. Azure started in 2010 and has since become the second-biggest cloud service provider in the world. Azure offers various services like Azure Virtual Machines, Azure Storage, Azure SQL Database, and Azure Cosmos DB, among others. These services help businesses create and put applications into use easily, without needing to be concerned about the technology behind it. For instance, a company can utilize Azure Virtual Machines to operate Windows or Linux virtual machines online.

Azure is also good for running tasks that involve machine learning and handling large amounts of data. Azure offers different services like Azure Machine Learning, Azure Databricks, Azure HDInsight, and Azure Data Factory that can be used for these purposes.

## Google Cloud Platform (GCP)

Google Cloud Platform (GCP) is a company that provides different services like computing, storing data, managing databases, and networking. GCP started in 2011 and has grown to become the third biggest cloud service provider globally. GCP offers many services like Google Compute Engine, Google Cloud Storage, Google Cloud SQL, and Google Cloud Spanner, along with others.

These services help businesses create and put applications out there easily and fast, without having to worry about the technical stuff underneath. For instance, a company can use Google Compute Engine to operate virtual computers over the internet. The company can

use Google Cloud Storage to save different types of information, like files, blobs, and queues. They can also use Google Cloud SQL to organize and expand relational databases.

### **Oracle Cloud Infrastructure (OCI)**

Oracle Cloud Infrastructure is a cloud service provider that offers different services like computing, storing, managing databases, and making connections. OCI started in 2016 and has become one of the top cloud service companies. OCI offers a variety of services like Oracle Compute Cloud Service, Oracle Object Storage, Oracle Autonomous Database, and Oracle Cloud Networking, among other things. For instance, a company can use Oracle Compute Cloud Service to operate virtual machines in the internet. The company can use Oracle Object Storage to save data, like files, objects, and archives. They can also use Oracle Autonomous Database to handle and expand their databases.

All four cloud service providers offer similar services but they each have different strengths and weaknesses. AWS is famous for having many different services and being easy to use. Azure is famous for working well with Microsoft products. GCP is famous for being good at analyzing data and using machine learning. OCI is famous for being very fast and secure.

**- Mrs. Reshma Totare  
Assistant Professor**

**ITSA**

## **CELEBRATING 25 YEARS OF EXCELLENCE: AISSMS IOIT**

In the heart of Pune, an educational institution has quietly but resolutely marked a significant milestone in its journey of shaping young minds and fostering technological innovation. AISSMS Institute of Information Technology, known as AISSMS IOIT, recently celebrated its 25th anniversary, a testament to its commitment to providing quality education in the field of information technology. Established in 1998, AISSMS IOIT has come a long way since its inception. Over the years, it has grown into a premier institution that consistently produces skilled professionals in the ever-evolving field of IT.

The institute's journey has been characterized by a dedication to academic excellence, a focus on research and development, and a vision to prepare students for the challenges of the digital age. The institute boasts a team of experienced and knowledgeable educators who impart technical skills and nurture creativity and critical thinking. Their guidance has helped countless students realize their potential and achieve remarkable success in various sectors of the IT industry. AISSMS IOIT has also

actively promoted research and innovation. It has provided students with a conducive environment to explore emerging technologies, engage in cutting-edge research, and develop innovative solutions to real-world problems. This commitment to innovation has resulted in numerous projects, publications, and accolades for both faculty and students. Beyond academics, AISSMS IOIT places a strong emphasis on holistic development. The



The institute encourages students to participate in extracurricular activities, ensuring that they are well-rounded individuals who can excel in both their professional and personal lives.

As AISSMS IOIT marks 25 years of educational excellence, it stands as a shining example of how an institution can evolve, adapt, and thrive in an ever-changing world. With a steadfast commitment to nurturing talent, fostering innovation, and preparing students for the challenges of the digital era, AISSMS Institute of Information Technology continues to be a beacon of hope for aspiring technologists and a source of pride for the educational landscape of Pune.

**-Anurag Gargote**

**President, ITSA**

**BE IT**



## NARCISSISM: A DELICATE BALANCING ACT

Self-confidence is undeniably a positive attribute, a vital tool for personal growth. However, the line between self-assuredness and narcissism is delicate. It often proves challenging to distinguish where healthy self-confidence ends and the perils of narcissism begin. Just as love and friendship share a fine line, so does the transition between these states often go unnoticed. The term "narcissism" traces its origins back to Narcissus, a prince from Greek mythology. The legend holds a valuable lesson about the dangers of unchecked self-love.

### The Story of Narcissus:

In ancient Greek lore, Narcissus, a prince of extraordinary beauty, unknowingly faced a curse. A sage predicted that his life would thrive as long as he never glimpsed his own reflection. Narcissus' arrogance grew as he aged, and he heartlessly rejected those who professed love to him, causing immense pain. The curse was eventually fulfilled when he encountered his reflection in a lake. His unreciprocated affection for his own reflection led to his downfall.

### Identifying Narcissism:

Narcissism, with its damaging consequences, extends beyond self-absorption. Symptoms include:

1. **Exaggerated Self-Importance:** Believing oneself to be superior to all.
2. **Grandiose Statements:** Using phrases like "Who else but me?" or "I sometimes feel like a god."
3. **Love Bombing:** Showering excessive affection on others to fuel one's ego.
4. **Gaslighting:** Manipulating others to feel inferior, weakening their self-esteem.
5. **Lack of Empathy:** An inability to understand or share others' feelings.
6. **Avoiding Self-Critique:** Being unable to handle criticism.
7. **Sadism:** Gaining pleasure from causing pain or humiliation to others.



### Guarding Against Narcissism:

Healthy narcissism exists, especially in children, but unchecked narcissism poses a threat. Additionally, a form of narcissism driven by a genuine desire for societal betterment or a country's welfare can be considered controlled or healthy.

To steer away from narcissism, consider these steps:



**1. Dealing with Rejections/Failures**

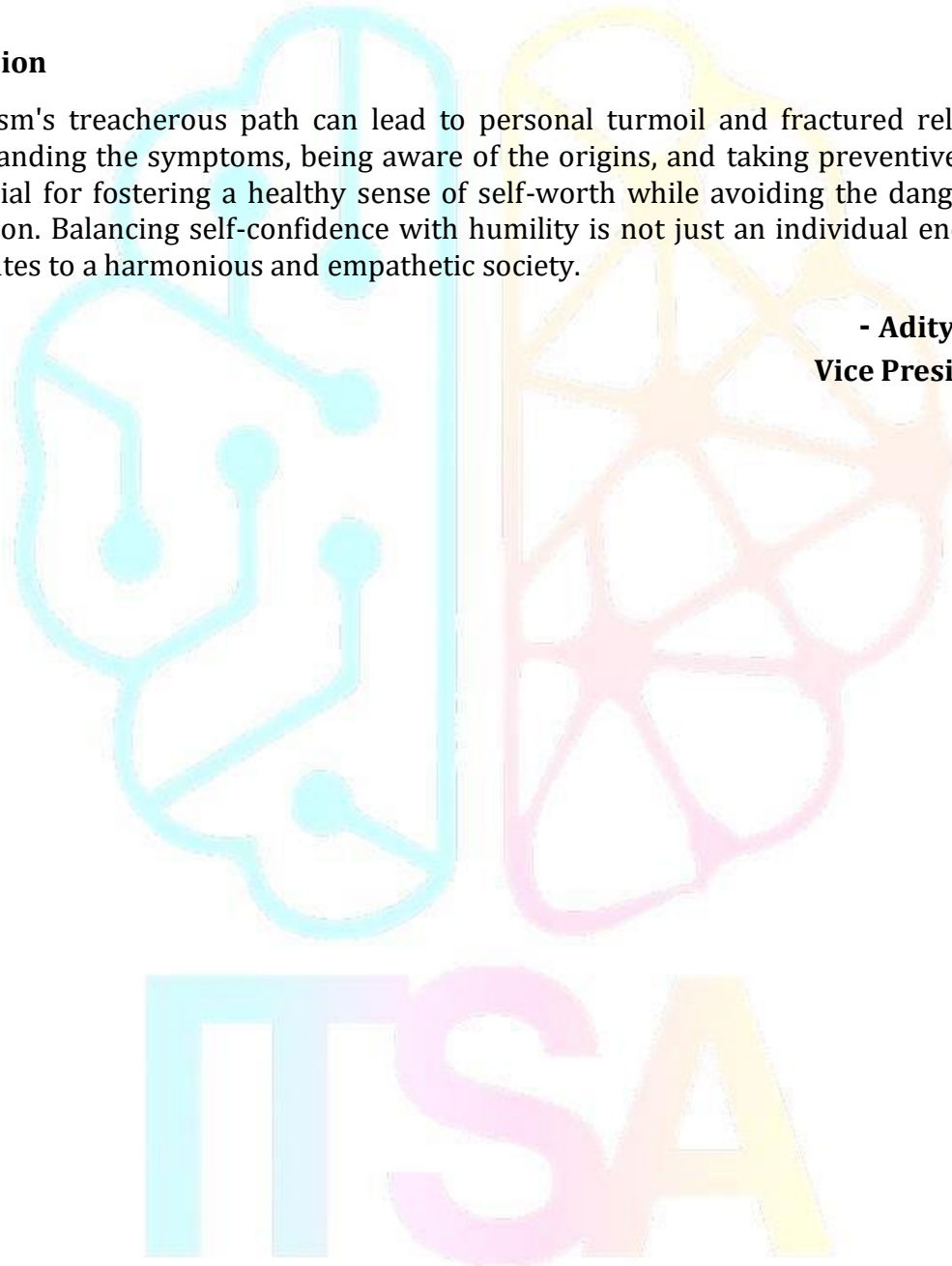
**2. Practicing Humility**

**3. Embracing Democratic Behaviour**

### **Conclusion**

Narcissism's treacherous path can lead to personal turmoil and fractured relationships. Understanding the symptoms, being aware of the origins, and taking preventive measures are crucial for fostering a healthy sense of self-worth while avoiding the dangers of self-absorption. Balancing self-confidence with humility is not just an individual endeavour; it contributes to a harmonious and empathetic society.

**- Aditya Shiledar**  
**Vice President, ITSA**  
**TE IT**



# BLOCKCHAIN TECHNOLOGY

Blockchain technology, born from the inception of Bitcoin in 2008, has evolved far beyond its cryptocurrency origins. With its decentralized and secure structure, blockchain is reshaping industries by solving challenges related to trust, transparency, and data integrity.

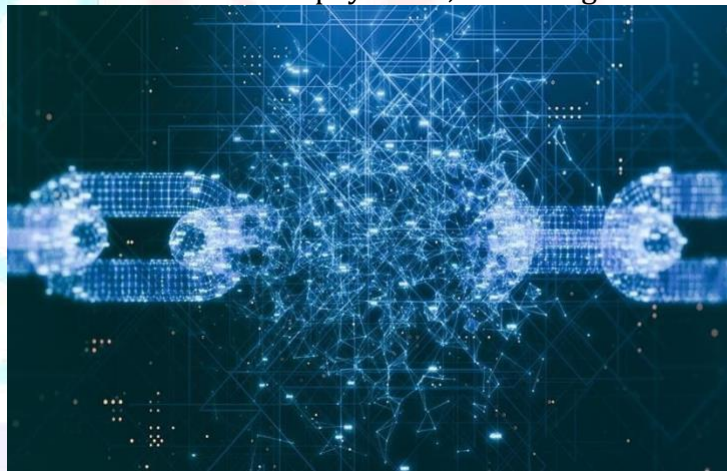
## Beyond Cryptocurrency

Originally conceptualized for Bitcoin transactions, blockchain's potential was quickly recognized in various sectors. Its transparent, secure, and decentralized nature makes it ideal for addressing trust issues and reducing reliance on intermediaries.

## Applications Across Industries

Blockchain's impact is seen across diverse industries:

1. **Supply Chain:** Enhancing transparency by tracking product origins and movements, reducing counterfeiting and optimizing logistics.
2. **Financial Services:** Enabling secure cross-border payments, reducing fraud through immutable records, and facilitating decentralized financial instruments.
3. **Healthcare:** Revolutionizing data management with secure patient records and interoperability.
4. **Identity:** Providing self-sovereign digital identities, benefiting areas with limited official documentation.
5. **Real Estate:** Streamlining property transactions and reducing fraud with tamper-proof ownership records.
6. **Voting Systems:** Enhancing electoral process security with transparent and tamper-proof voting records.



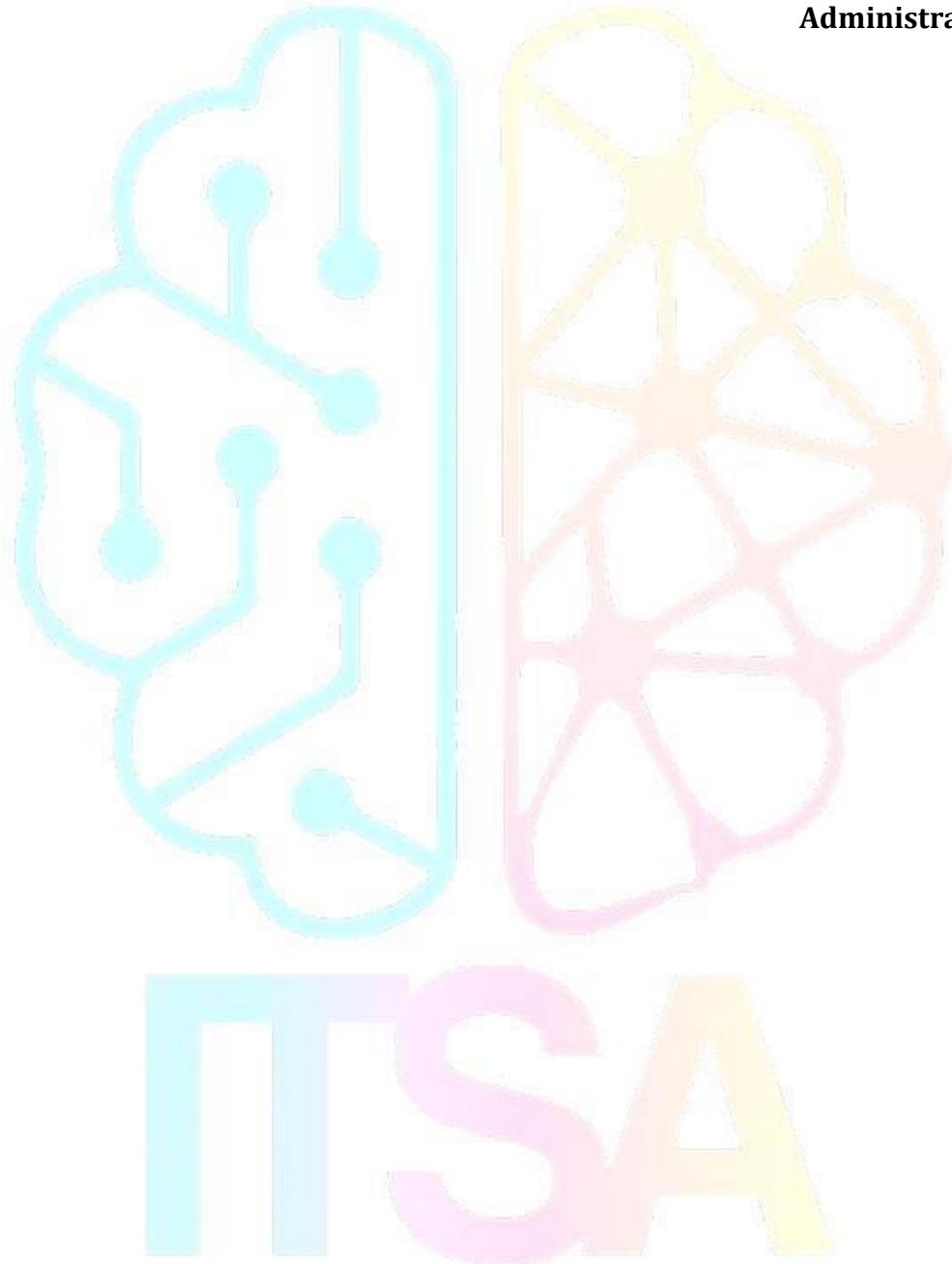
## Challenges and Future

Challenges like scalability, energy consumption, regulatory clarity, and platform interoperability persist. However, ongoing research aims to overcome these hurdles, expanding blockchain's potential applications

Blockchain's journey from Bitcoin's creation to its current state as a transformative technology highlights its ability to reshape industries. With increased efficiency, security,

and new business models, blockchain paves the way for innovation and collaboration on a global scale. Its decentralized essence positions it as a catalyst for lasting change in the way industries operate and society's function.

**- Aval Sonigara**  
**Administrator, ITSA**  
**BE IT**



# CHANDRAYAAN MISSIONS OF INDIA

## Introduction

India's space endeavors have steadily risen to prominence on the global stage, with the Indian Space Research Organisation (ISRO) leading the charge. Among ISRO's many accomplishments, the Chandrayaan missions have garnered widespread attention and acclaim. These missions represent India's tireless pursuit of lunar exploration, scientific discovery, and technological innovation.



## Chandrayaan-1: The Trailblazer

The Chandrayaan program began with Chandrayaan-1, India's maiden lunar mission, launched on October 22, 2008. This historic endeavor was a significant milestone for ISRO and the nation as a whole. The primary objectives of Chandrayaan-1 were to map the lunar surface, study the Moon's mineral composition, and search for water ice in its polar regions. However, Chandrayaan-1 faced an unexpected turn of events. In August 2009, communication with the spacecraft was abruptly lost, leaving many to believe that the mission had come to an untimely end.

## Chandrayaan-2: India's Ambitious Leap

Chandrayaan-2 was launched on July 22, 2019, and included three key components: an orbiter, a lander named Vikram, and a rover named Pragyan. The orbiter was designed to study the lunar surface and analyze the exosphere, while the rover was equipped to explore the Moon's surface, conducting experiments to understand its geological and chemical composition.



## Chandrayaan-3: A Resilient Return

In the wake of the Chandrayaan-2 lander's failure, ISRO remained undeterred. They swiftly began work on Chandrayaan-3, a follow-up mission with the goal of successfully landing a rover on the Moon. Chandrayaan-3 benefited from the lessons learned from Chandrayaan-2's unfortunate landing mishap and aimed to rectify those issues.

## Scientific Impact and Future Endeavors

The Chandrayaan missions have contributed significantly to lunar science and our broader understanding of the Moon. They have not only confirmed the presence of water on the Moon but also shed light on its distribution and potential utilization for future lunar missions.



## Conclusion

India's Chandrayaan missions represent a remarkable chapter in the nation's space exploration journey. From the groundbreaking discoveries of Chandrayaan-1 to the resilience of Chandrayaan-2 and the success of Chandrayaan-3, ISRO's dedication to lunar exploration and scientific discovery is evident. These missions have not only advanced our knowledge of the Moon but also solidified India's position as a prominent player in the field of space exploration.

**- Akshita Ghanwat**  
**Public Relation Head, ITSA**

**BE IT**

## TRANSFORMING SOCIETY THROUGH QUANTIFIED INSIGHTS

Despite its origin in 2013, the concept of "datafication" maintains its contemporary relevance. This term signifies more than just the conversion of analog information into digital form; it embodies the intricate transformation of social behaviors into quantifiable data through advanced mathematical analysis. In essence, datafication doesn't merely involve data collection and analysis; it strives to enhance our daily experiences, making them smarter, more efficient, and enjoyable.

The impact of datafication is particularly noteworthy in its ability to revolutionize businesses. By harnessing real-time data, companies can make well-informed decisions, leading to the refinement of their products and services. Moreover, datafication is a key player in soliciting customer feedback, a pivotal element in the continuous improvement of product quality across diverse industries.

For instance, consider the realm of data-driven marketing strategies. This approach entails gathering customer insights from various sources like social media, emails, and digital platforms. Subsequently, these insights are utilized to craft personalized campaigns for individual clients, effectively targeting the intended audience.

Recent times have witnessed a remarkable shift towards cloud-based infrastructure within businesses.

As reported by the International Data Corporation (IDC), the cloud services market has ballooned from USD \$90.5 billion in 2016 to an astounding USD \$408.5 billion in 2021. This transition underscores the importance of data in fuelling operational efficiency and scalability.

In the midst of this digital evolution driven by datafication, an essential facet demanding unwavering attention is data protection. Data protection encompasses the range of measures that organizations implement to safeguard personal information and ensure its security. This principle dictates that data can only be processed with explicit consent, given willingly and with a clear understanding of its implications.

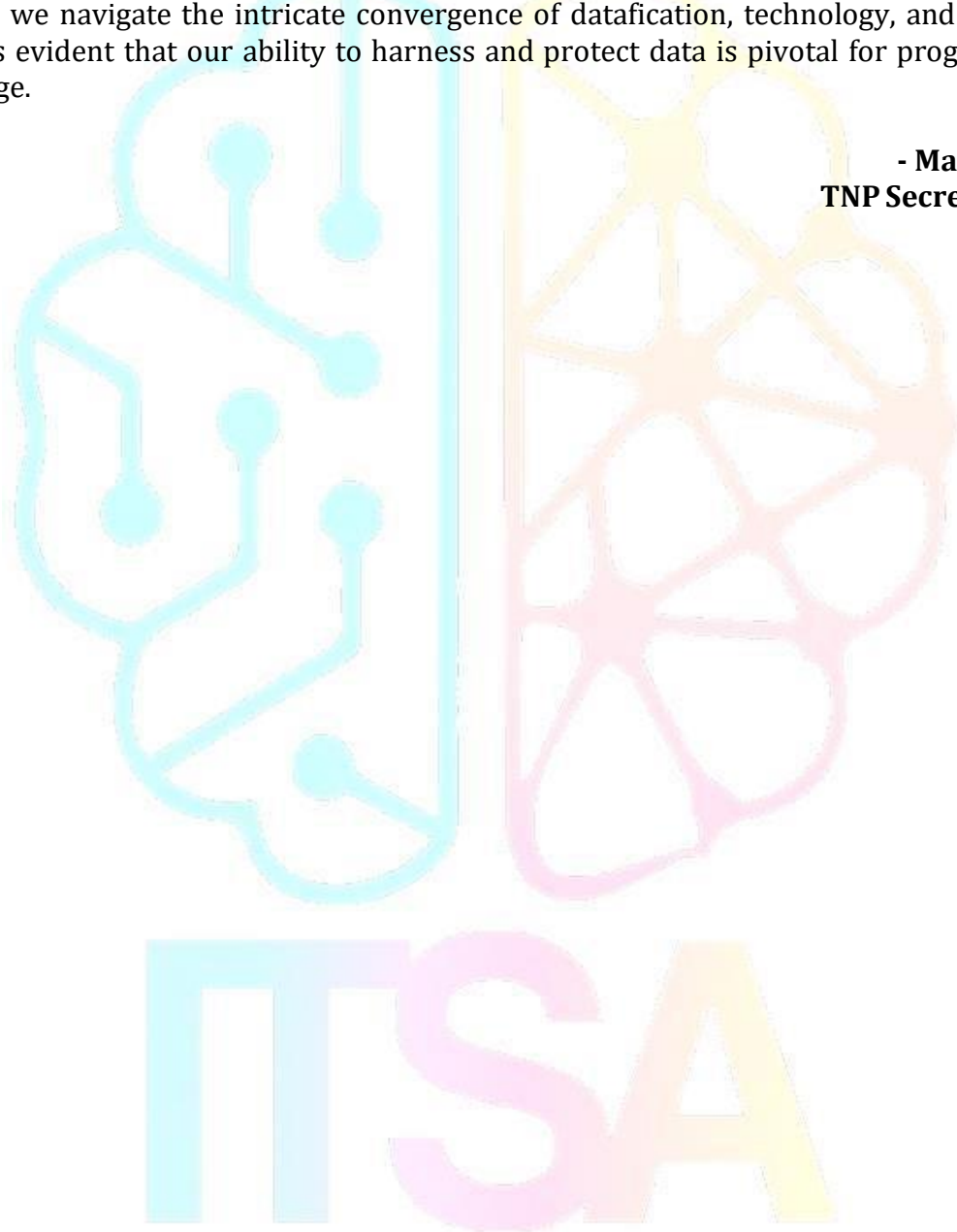
In today's landscape, the ability to leverage data for decision-making and decipher its insights is of paramount importance. The confluence of technologies such as artificial intelligence, machine learning, and big data analytics has democratized this process. This



democratization extends across various domains, including human resources, accounting, marketing, and banking. Regardless of the domain, the availability of data presents an opportunity for artificial intelligence to empower decision-making processes.

In conclusion, datafication transcends its initial definition; it has evolved into a transformative force shaping how we interact with data, make decisions, and optimize our lives. As we navigate the intricate convergence of datafication, technology, and privacy, it becomes evident that our ability to harness and protect data is pivotal for progress in the digital age.

**- Marmik Patil**  
**TNP Secretary, ITSA**  
**BE IT**



## THE G20: AN INTERGOVERNMENTAL FORUM

The Group of Twenty (G20) is an intergovernmental forum that brings together the world's major economies. It was established in 1999 in response to the Asian financial crisis, and its members represent about 85% of the global GDP, 80% of world trade, and two-thirds of the world's population.

The G20 brings together a varied spectrum of ideas and experience to address these urgent concerns, whether they are from the government or the corporate sector. The G20 seeks to advance inclusive and sustainable economic growth for all countries by encouraging communication and cooperation.

The G20's primary goal is to promote international economic cooperation and stability. It does this by discussing and developing policy solutions to global economic challenges such as financial crises, climate change, and poverty. India is one of the G20's member countries. It assumed the presidency of the G20 in December 2022 and will hold the position until November 2023. During its presidency, India will focus on the following key themes:

- Promoting an open, inclusive, and rules-based multilateral trading system
- Investing in climate action and clean energy
- Tackling inequality and poverty
- Enhancing financial stability and resilience

### G20 SUMMIT भारत 2023 INDIA NEW DELHI, INDIA | 2023 9-10 SEPTEMBER



The G20 summit is the annual meeting of the G20 leaders. It is held in a different member country each year. The 2023 G20 summit will be held in India, from 29-30 October. The summit will be a major opportunity for India to showcase its economic progress and to engage with other G20 countries on the key issues facing the global economy.



In addition to the annual summit, the G20 also holds a number of other meetings throughout the year. These meetings are attended by representatives from the G20 member countries as well as from other international organizations. The meetings are used to discuss and develop policy proposals on a wide range of issues. It provides a platform for the world's major economies to discuss and develop solutions to the challenges facing the global economy. The G20 is also a way for developing countries to have a voice in the global economic system.

**- Ankita Giri**

**Documentation Head, ITSA**

**BE IT**



# **AZADI KA AMRIT MAHOTSAV: 75 YEARS OF INDIAN INDEPENDENCE**

India is celebrated its 75th anniversary of independence this year, and the government has launched a year-long event called Azadi Ka Amrit Mahotsav to commemorate the occasion. The Mahotsav (festival) is a celebration of India's progress in the areas of education, health, technology, and other sectors.

## **Education**

One of the most significant areas of progress in India has been in education. The literacy rate has increased from 18% at the time of independence to 77% today. The number of schools has also increased dramatically, and there is now a greater focus on quality education. The government has also launched several initiatives to improve access to education for girls and marginalized communities.

## **Health**

India has also made significant progress in the area of health. The life expectancy has increased from 32 years at the time of independence to 72 years today. The infant mortality rate has also declined significantly. The government has launched several initiatives to improve health care, such as the National Health Mission and the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY).

## **Technology**

India has also made rapid progress in the area of technology. The country is now a global leader in information technology and the software industry. The government has also launched several initiatives to promote the use of technology in other sectors, such as agriculture, education, and health care.

Azadi Ka Amrit Mahotsav is a time to celebrate India's achievements and to look forward to the future. The government has set ambitious goals for the next 25 years, and the Mahotsav is a chance to recommit to these goals and to work together to make India a better place for all.

Azadi Ka Amrit Mahotsav is a time to celebrate India's past, present, and future. It is a time to remember the sacrifices of the freedom fighters, to appreciate the progress that has been made, and to look forward to the bright future that lies ahead.

## **Sports**

India has a rich history of sports, and the country has produced some of the world's greatest athletes in a variety of sports, including cricket, hockey, badminton, and wrestling. In recent

years, India has also made significant progress in other sports, such as shooting, gymnastics, and table tennis.

At the 2020 Tokyo Olympics, India won a record seven medals, including two gold medals that included Neeraj Chopra's gold in Javelin Throw. This was a major achievement for the country, and it showed that India is a force to be reckoned with in international sports.



- Swapnil Tekale  
Technical Secretary, ITSA  
BE IT



# RISE OF NO-CODE/LOW-CODE IN AI APP DEVELOPMENT

## Introduction

The technological landscape is evolving at an unprecedented pace, and with it, the demand for efficient software development tools has grown exponentially. One of the most remarkable trends in recent years is the emergence and rapid adoption of No-Code/Low-Code platforms for creating AI-powered applications.

## Democratizing Access to AI Technology

AI has the potential to revolutionize industries and enhance user experiences across various domains. However, traditional AI app development often requires specialized skills and substantial resources, limiting its accessibility to those with extensive technical backgrounds.

## Accelerated Development Process

Time-to-market is crucial in the modern business landscape, and No-Code/Low-Code platforms excel in expediting the development cycle. Traditional coding can be time-consuming, involving various stages such as debugging, testing, and optimization. With No-Code/Low-Code platforms, developers can visually design the application's logic and interface, utilizing pre-built AI components and integrations.

## Reduced Dependency on Technical Expertise

No-Code/Low-Code platforms abstract much of the technical complexity through intuitive interfaces and pre-configured modules. This reduction in dependency on deep technical expertise empowers domain experts who possess a profound understanding of the specific industry requirements.

## Addressing the Skills Gap

The technology sector faces a persistent shortage of skilled developers and data scientists. No-code/Low-Code platforms offer a solution by allowing businesses to bridge the skills gap and initiate AI projects without waiting for highly specialized talent to become available.

## Iteration and Flexibility

In the fast-paced world of technology, iteration and adaptability are key. No-code/Low-Code platforms enable developers to quickly prototype and iterate on their AI applications.

## Empowering Cross-Functional Collaboration

Designers, subject matter experts, business analysts, and developers can all contribute their unique perspectives without being hindered by the technical intricacies of coding.



## Conclusion

The rise of No-Code/Low-Code platforms in AI app development is a transformative trend that is reshaping how technology is created and deployed. By democratizing access to AI, expediting development cycles, reducing technical barriers, addressing skills shortages, and fostering collaboration in various industries.

**-Aryaman Andhure**  
**Sports Secretary, ITSA**  
**BE IT**



## **RIDING THE DIGITAL RAILS: METRO TECHNOLOGY IN 21<sup>ST</sup> CENTURY**

Rail-based 'Mass Rapid Transit System' has been widely accepted as a solution for most of the traffic and environmental pollution related problems which major cities throughout the world are facing now. Metro rail construction activities are being undertaken in a big way in India.

Some times when travelling within the city on roads has become an emerging issue in all growing cities, Metro with its dedicated infrastructure provides a convenient and smoother movement for public- intracity on high traffic routes and longer distances.

Followed technology is used in the metro railroad: 'CATC' (Continuous Automatic Train Control System) based on "CBTC" (Communication based Train Control System) which includes ATP (Automatic Train Protection), ATO (Automatic Train Operation) and ATS (Automatic Train Supervision) subsystems using radio communication between Trackside and Train.

Artificial intelligence (AI) can help in route optimization; real time train movement monitoring; crew fostering.

Digital technologies are used in designing coaches, signaling and traffic management, freight management, train services, workforce and customer management.

The Metrorail will significantly reduce the number of other vehicles and thus reduce carbon emissions by 2.02 lakh tones annually, which will significantly impact the climate.

Kolkata metro holds the record of being India's first metro service. It was introduced in 1984.

Metro in India will continue to become a dominant mode of transport in the future.

Generate billions of dollars in tax revenue, support hundreds of thousands of jobs, and help businesses produce goods and services more efficiently. One of the main disadvantages of metro rail is that it only operates on specific routes, which may not be accessible to everyone.

Its most important advantage is that it is environmental friendly. It has a low cost that anyone can afford.

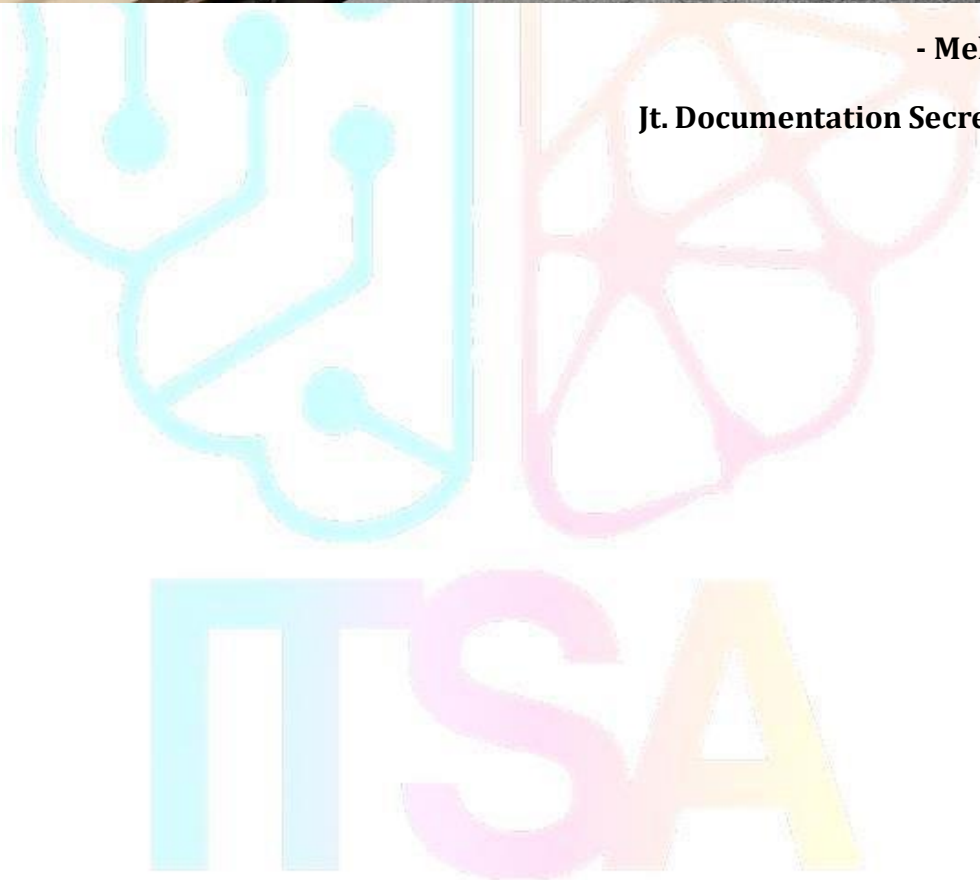
India continues to expand and modernize its metro technology, the nation is poised to reap the benefits of efficient, sustainable, and interconnected urban transportation systems, ultimately paving the way for smarter and more accessible cities for all.



- Mehul Pawar

Jt. Documentation Secretary, ITSA

TE IT



## **MY SNAPCHAT SUCCESS: FROM ZERO TO AR STAR**

As a student, I embarked on a journey that led me to curate more than 500 million views on Snapchat in less than 60 days. Today, I share my success story as an AR creator and the role that Under 25, an empowering community for students, played in shaping my path to popularity. When I started my journey, I was unsure of how creating lenses on Snapchat would help me in any way possible. Just like any other student I got a link to a Google Form to enroll in a program and I filled it without a second thought.

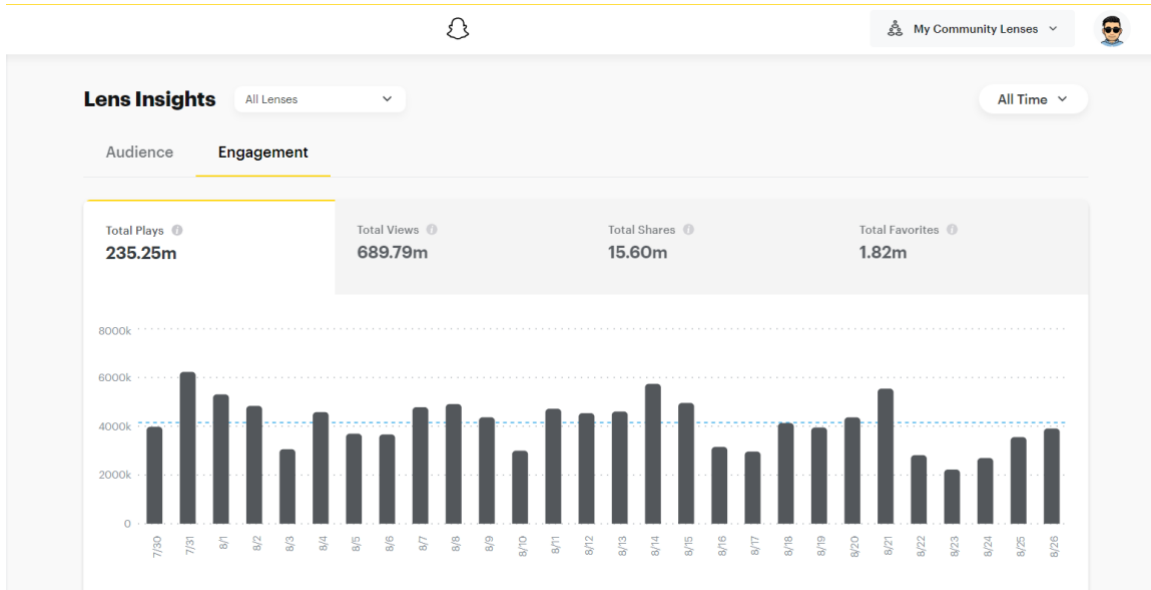
The program was initiated by Under 25, a company dedicated to fostering student expression without any hesitation. This program not only provided a platform for creative exploration but also connected me with like-minded individuals who shared a similar passion for AR creation. Over the course of 8 weeks, I have published over 300+ lenses on Snapchat and it has been nothing but success. Becoming a popular AR creator on Snapchat has not only allowed me to make a name for myself but has also opened up various opportunities. With this newfound talent, I am confident in my ability to explore career paths in fields such as advertising, marketing, and entertainment.

Motivated by the desire to empower others with the same skill-set, I recently had the opportunity to host an online workshop for students interested in creating lenses on Snapchat. The workshop provided a means of communication through which I was able to connect to aspiring students intrigued by AR culture. Indeed, it was a dreadful and mind-boggling experience being an introvert to teach others and pass on my knowledge to them. My success story as a popular AR creator on Snapchat is a testament to the power of determination, mentorship, and a supportive community.

Thanks to Under 25 and the guidance of my mentor Carol D'Silva, I was able to curate over 500 million views on Snapchat in record time. I am grateful for the lessons learned and the chance to share my knowledge through the online workshops. I hope my story inspires others to unleash their imagination and embark on their own journey towards success.

MTSA





**Top Lenses**  
The Lenses that Snapchatters engage with most.

Top Favored Lenses

Lens Name	Engagement
Heartyy BW 2	223.6k
Tom N Jerry	202.3k
Aesthetic Love	193.6k
Rabbit With Heart	185.6k
Fingers Hug	82.70k

**-Mohammed Munawwar Rangila**  
**Jt. Social media Team, ITSA**  
**TE IT**

## HOW DO INSTAGRAM ALGORITHMS WORK

According to Instagram, there are 6 key factors that influence the Instagram algorithm for feed posts:

### **Factor #1: Interest**

Your Instagram feed isn't only based on who you follow, it's also based on the accounts and types of posts you've liked historically.

The more the Instagram algorithm thinks you will "like" a certain type of post, the higher it will appear in your feed.

Basically, what you see in your Instagram feed is a combination of all of your Instagram behaviours. The accounts you interact with the most, the people you are tagged in photos with, and of course, the type of posts that you like and comment on.

This is why consistently showing up on Instagram is so important.

It sends positive signals to the Instagram algorithm — and gives your audience more opportunities to interact with your content.

### **Factor #2: Relationship**

The Instagram algorithm wants to prioritize posts from your friends, family, and accounts that you care about.

So, in order for Instagram to show you what you want (what you really, really want), the algorithm uses your interactions to piece together who is closest to you.

Thomas Dimson, a software engineer at Instagram, shared how Instagram could theoretically figure out who you care about the most, based on how you use the app:

People whose content you like (possibly including stories and live videos)

People you direct message

People you search for

People you know in real life

Instagram will try to calculate this relationship (and your interest level) as soon as you follow someone by serving you their content and monitoring how you engage with it.

### **Factor #3: Timeliness**

Not only does the algorithm pay attention to how much engagement your Instagram post gets, but it also looks at how long ago the photo was posted.

Instagram's algorithm cares about when you posted, because it always wants to serve you the latest, most interesting posts.

By finding your personalized best time to post on Instagram, you can hack the algorithm to increase your reach and get more likes and followers.

#### **Factor #4: Frequency**

How often do you open the Instagram app? If you're a frequent scroller, your feed will look more chronological, since Instagram tries to show you the best posts since your last visit.

If you check the Instagram app less often, your feed will be sorted into what Instagram thinks you'll like, instead of chronologically.



- Sarthak Shah

Jt. T&P Secretary, ITSA  
TE IT

## NAVIGATING IT ENGINEERING: PAST 3 YEARS

As I step into the penultimate year of my four-year journey in Information Technology (IT) engineering, a mix of emotions fills me. Reflecting on the past three years, I can't help but recognize the mistakes I've made along the way. However, rather than dwelling on regrets, I choose to view these missteps as valuable lessons that have shaped my growth. In this article, I'll openly share the mistakes I've encountered thus far and the strategies I'm employing to ensure a successful final year and beyond.

**Embracing the Power of Coding Sooner:** Looking back, one of the most significant mistakes I made was delaying my full immersion into coding. In IT, coding is the cornerstone of innovation, and my delayed start impacted my skill set. However, with my fourth year ahead, I've decided to devote more time to coding. I'm enrolling in coding bootcamps, dedicating time daily to coding practice, and taking on coding-related projects. The lesson here is clear: it's never too late to catch up, but starting early could have made a substantial difference.

**Elevating Academic Commitment:** The pursuit of excellence in academics took a back seat at times during my journey. As I approach my final year, I've realized that strong grades not only reflect understanding but also discipline and dedication. To address this, I'm implementing better time management strategies, creating a study schedule, and seeking academic support when needed. The remaining year provides an opportunity to elevate my academic performance and embrace learning more profoundly.

**Seizing Tech Event Opportunities:** The importance of tech events in the IT world cannot be overstated. Regrettably, I didn't fully grasp this significance in my earlier years. However, with my fourth year around the corner, I'm committed to actively participating in tech events. These events offer insights into emerging technologies, foster networking with professionals, and expose me to real-world applications. As I attend workshops, seminars, and conferences, I'm confident that my engagement will be a valuable asset moving forward.

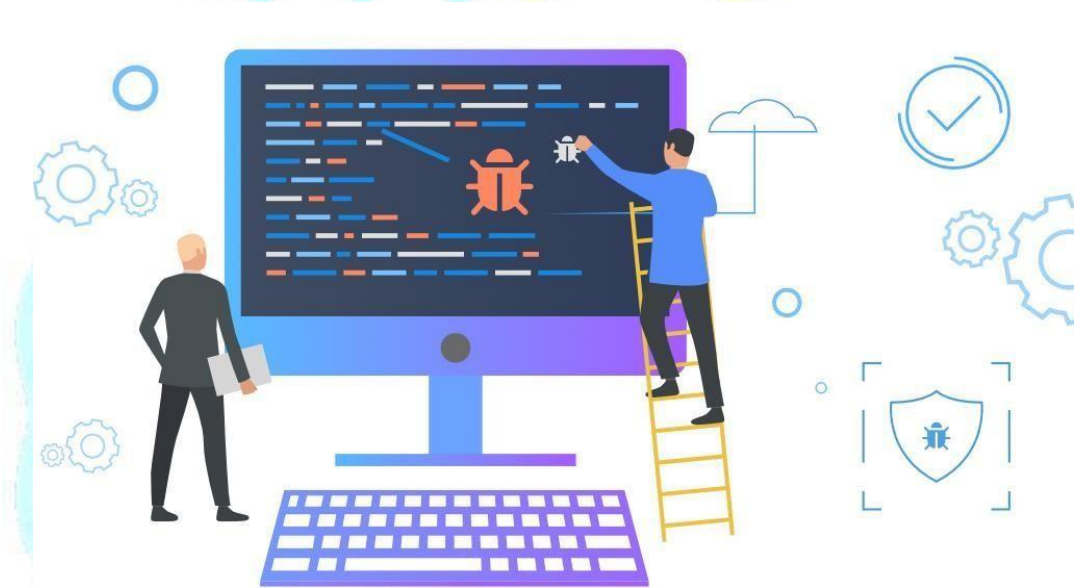
**Charting the Path Forward:** Coding Acceleration Plan: In my penultimate year, I'm focused on rapidly enhancing my coding skills. Online platforms, coding challenges, and collaborative projects will be my tools for catching up and excelling in this vital area.

**Academic Excellence Strategy:** I'm entering my final year with renewed determination for academic excellence. By adhering to a strict study schedule, seeking guidance from professors, and consistently reviewing coursework, I aim to maximize my learning potential.

**Tech Event Immersion:** I'm committed to participating in tech events regularly. This includes both local and virtual events, allowing me to stay updated with industry trends, connect with professionals, and potentially secure internships or job opportunities.



In conclusion, as I stand at the crossroads of my engineering journey, I acknowledge the mistakes I've made and the lessons I've learned. The penultimate year serves as a turning point—a chance to rectify errors, enhance skills, and prepare for a successful culmination of my IT education. With determination, perseverance, and the wisdom gained from past missteps, I am confident that my final year will be a testament to my growth, resilience, and readiness for the dynamic world of Information Technology.



- **Kartik Yeole**

**Jt. Technical Secretary, ITSA  
TE-IT**

**ITSA**

# PHOTOGRAPHY

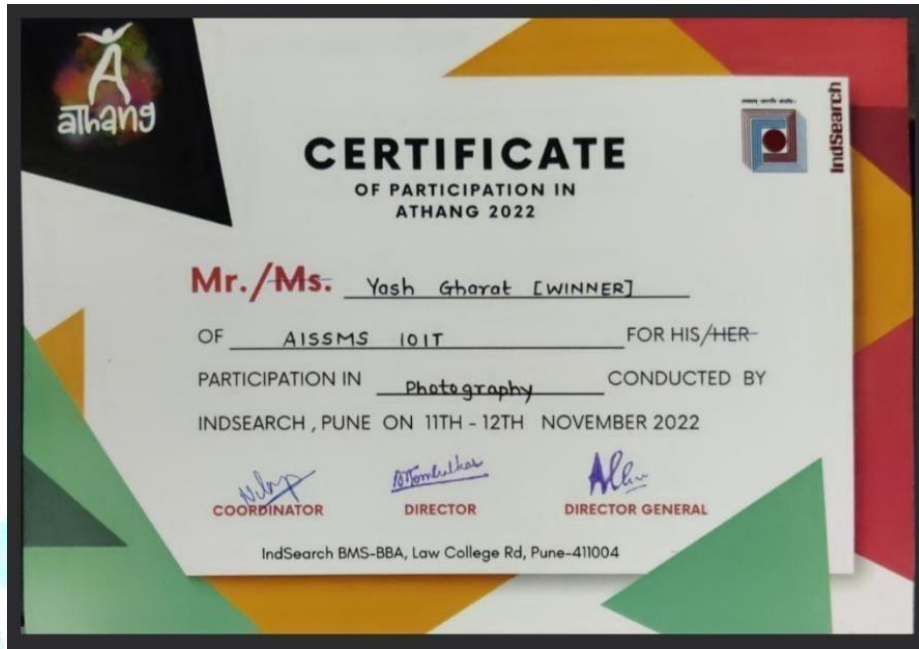
Photography is more than just clicking a button; it's about encapsulating emotions, freezing time, and telling stories through images. Participating in a photography event isn't just a competition; it's an opportunity to showcase your creativity, technical skills, and unique perspective. Winning such an event requires more than just a good camera; it demands passion, dedication, and a keen eye for detail. In this article, we delve into the journey of winning a photography event and the essential elements that contribute to a triumphant victory.

**Choose Your Focus:** Every photography event has a theme or category. Whether it's landscapes, portraits, wildlife, or abstract, selecting the right category aligns your work with the event's objectives. It's important to choose a category that resonates with you and allows you to showcase your strengths as a photographer.

**Plan and Prepare:** Before embarking on your photography journey, take time to plan and prepare. Research the event's guidelines, rules, and expectations. Understand the technical requirements, such as image resolution and format. Scout locations if possible, and anticipate the lighting conditions you might encounter.

**Submission and Presentation:** When submitting your photographs, follow the event's guidelines meticulously. Present your work professionally and thoughtfully. The way you present your images can influence how judges perceive your effort and creativity.

**Confidence and Patience:** After submitting your work, maintain confidence in your abilities and exercise patience. Understand that the judging process takes time, and winning is just one part of the photography journey. Regardless of the outcome, each experience contributes to your growth as a photographer. Winning a photography event is a culmination of dedication, skill, and a passion for storytelling through images. It's not just about claiming a prize; it's about celebrating the art of photography and sharing your unique vision with the world. So, as you embark on your journey to conquer the photography event, remember to enjoy the process, learn from each moment, and let your creativity shine brightly through your lens.



-Yash Gharat  
Media Team, ITSA  
TE IT

ITSA

## HERE I WAS YESTERDAY, HERE I AM TODAY?

Coming to a metro city from my hometown first time in my life there was a combination of feelings in mind but there was a determination to pursue my hobby of speech which I started at the age of 3 because **“The only thing that comes to us without effort is old age”**

\As new to the college campus I was unaware that the Speak for India competition is organized and other participants asked about the venue so the urge to participate developed and in the preliminary round from all over Pan India 4500+ candidates participated where on spot topic was given and we had to debate according to the subject provided from 140+ district participants in my campus to becoming top 8 and qualifying for zonal was so amazing for me

In zonal debating and orating in front of the jury of Times of India and Maharashtra Times journalists and strongly debating on points of how OTT platforms are harmful to today's youth and from 4500+ it came to the Top 30.

**“THE JOURNEY OF A THOUSAND MILES. BEGINS WITH A SINGLE STEP”** My first Mumbai travel happened because of my speech and I was proudly the smallest age participant of 18 years competing with parliamentary competition speakers, advocates, and renowned speakers in the semifinals. Reaching to semifinals and networking with multidisciplinary people of pan India really helped me in growing me. After speaking for India also I won state-level and university level elocution, debate, and poetry competitions but speaking for India has a different place because it is said some beginnings are always special to remember.



**-Yash Chavhan  
Documentation team, ITSA  
SE IT**



## ACM WINTER SCHOOL: DIVING INTO ML OPTIMIZATION

Last December, we had the privilege of diving deep into the realm of Optimization in Machine Learning through the ACM Winter School at IIT Goa. Out of countless applicants from across India, we were among the fortunate 40 chosen for this enriching experience. For two weeks, we were immersed in a world of knowledge, surrounded by the serene beauty of Goa.

The days were filled with enlightening lectures from esteemed professors, both from IITs and beyond, including guests from Singapore. The intricacies of Optimization in Machine Learning and Operations Research were unravelled in these engaging sessions, enriching our understanding of these pivotal subjects. Putting theory into practice, we engaged in hands-on sessions using software like MATLAB. These practical exercises bridged the gap between concepts and real-world applications, equipping us with tangible skills to tackle complex challenges.

Beyond the classroom, this journey gave us more than knowledge—it gave us friendships. Meeting fellow participants from diverse backgrounds was a highlight. We shared stories, exchanged ideas, and formed connections that have the potential to shape our futures. As a delightful bonus, IIT Goa had organized a trip for us to experience the beauty of this coastal paradise. Sunset strolls on the beach, exploring local culture, and bonding with fellow participants created a holistic experience that combined learning with leisure.

In essence, the ACM Winter School at IIT Goa was not just an event; it was an experience that blended learning with fun, and connections with personal growth. Like a ray of light in our academic journey, it illuminated our minds and hearts alike.





- Tanmayee Mali (Treasurer, ITSA), Yash Vyavahare

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## EMBARKING ON A JOURNEY OF DISCOVERY: MY RESEARCH INTERNSHIP EXPERIENCE AT SAC, ISRO

My research internship at SAC, ISRO, has been nothing short of extraordinary, filled with learning, innovation, and the thrill of witnessing the success of the recent Chandrayaan 3 mission.

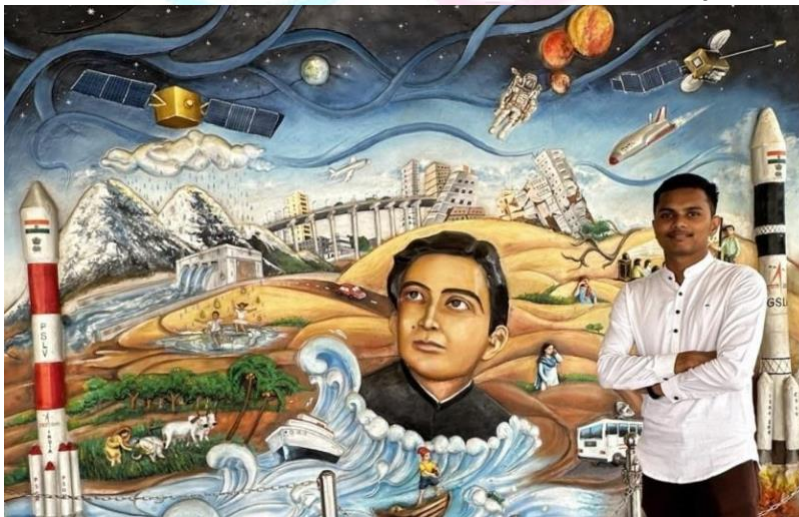
The SAC, situated in the heart of Ahmedabad, is a hub of innovation where cutting-edge technology converges with ambitious dreams of exploring the cosmos. The workculture at SAC is a unique blend of discipline and creativity.

What sets SAC apart is its emphasis on fostering a conducive environment for learning and exploration. As an intern, I was pleasantly surprised by the willingness of the senior scientists and researchers to guide and mentor. The availability of resources at SAC is remarkable, enabling interns like me to work with advanced equipment and technologies.

One of the most remarkable experiences during my internship was witnessing the triumph of ISRO's Chandrayaan 3 mission. Being at the forefront of space exploration, SAC allowed me to be a part of history as the mission achieved its objectives. The success of Chandrayaan 3 not only added to India's space achievements but also reinforced ISRO's reputation as a pioneering space agency globally.

The internship journey has been nothing short of transformative. From collaborating with experienced researchers on challenging projects to engaging in brainstorming sessions that redefine the boundaries of innovation, every moment at SAC has been a step towards personal and professional growth.

In the words of Dr. A.P.J. Abdul Kalam, "Dream, dream, dream. Dreams transform into thoughts and thoughts result in action." My time at SAC has not only allowed me to dream but also equipped me with the tools to turn those dreams into reality.







**- Yash Rajendra Vyavahare**  
**Researcher, SAC, ISRO**  
**BE IT**

ITSA



## GDSC WOW HACKATHON 2023

I am delighted to share with you that our team WEBSCALERS emerged as the winner of the GDSC WOW HACKATHON 2023. This achievement brings me great joy and a tremendous sense of pride. The hackathon took place at KMCT College in Kozhikode, Kerala and it was an extraordinary experience that presented us with various challenges and countless opportunities.

During the hackathon, we choose the topic "Climate Action" from the United Nations goals. Our project, titled "Disaster Management and Climate Change," #disaster focused on stopping, monitoring, and creating awareness through an AI-enabled mobile app and website. We progressed from the first round with around 2000 participants to the final round, where only 36 teams faced a 36-hours coding challenge.

On the final day, we presented our project to the judges, showcasing our robust system consisting of a web platform, user application, and ML model implementation. The judges were highly impressed by our ideas, comprehensive demonstration, and the positive impact we aimed to achieve in climate action.

This achievement was a result of the collaborative effort and determination of our team, WEBSCALERS. Each member contributed their skills and expertise to address various aspects of climate change and disaster management.

Our journey from Pune to Kerala added an exciting layer to the experience. We connected with like-minded students, immersed ourselves in the local culture, and admired the natural beauty of Kerala. From breath taking beaches to vibrant markets, every moment was filled with memorable experiences.

Securing the 2nd rank in this hackathon is a testament to our dedication, perseverance, and innovative thinking. Being part of this event has provided invaluable learnings, friendships, and cherished memories.

Special thanks to our Principal Dr. Pradeep Mane and HOD Meenakshi Thalor for their unwavering support throughout this journey. Their belief in our abilities, recognition of our potential, and trust in our team's capabilities played a pivotal role in our success.



**- Prayag Bhosle  
- Upendra Taral  
- Chinmay Beldar  
- Pratham Pawale  
BE-IT**

## A JOURNEY OF DEDICATION & MENTORSHIP

I am elated to announce that I have clinched the coveted FIRST PRIZE in the esteemed Software Development Methods competition hosted by ESTECO Company! This achievement stands as a testament to the countless hours of hard work, dedication, and guidance that propelled me towards success.

My heart brims with gratitude as I extend my sincerest thanks to Hod Meenakshi Thalor ma'am and Pragati Mahale ma'am for affording me this incredible platform to showcase my skills and talents. Their unwavering support and encouragement have been the cornerstone of my triumph, empowering me to reach new heights.

A special note of appreciation goes out to Vivek Honule sir, whose expert guidance has illuminated my path throughout this transformative journey. His unwavering mentorship has not only nurtured my technical prowess but has also sculpted my approach to software development, instilling in me a deep understanding of the intricacies involved.

Participating in this competition has been a tremendous honour, and the recognition I have received serves to further ignite the flames of my passion for software development. The experience has solidified my commitment to excellence in this field and motivated me to continue pushing boundaries.

As I reflect upon this journey, I am reminded of the power of mentorship, the importance of unyielding support, and the fulfilment that arises from pursuing one's passion with fervour. This victory marks not just an endpoint, but a milestone on a path of continuous growth and innovation.

I am excited about the possibilities that lie ahead and look forward to channelling this achievement into even more remarkable contributions to the world of software development. With renewed determination and an indomitable spirit, I am ready to embark on new challenges and opportunities that await.

Thank you to everyone who has been a part of this journey, and here's to a future marked by innovation, collaboration, and unceasing growth!



- Lilavati Mhaske  
BE IT

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## MY RESEARCH INTERNSHIP EXPERIENCE AT SAC, ISRO

I am Vedanti Jitendra Patil, TE Student of Information Technology at AISSMS IOIT. Currently I am working as Web Development intern at Mandet Pvt. Ltd. This article is a brief about my journey and all experiences I gained. Getting into this internship was one of the most crucial moments of my life. Below article gives insights of my journey.

Stepping into the professional world through my first internship opportunity is an exhilarating and transformative experience. It is a chance for me to bridge the gap between classroom knowledge and real-world application. In this essay, I will recount my journey right from beginning and my experiences during the internship, highlighting the skills I gained, the hurdles I faced, and the profound impact it has on my personal and professional growth.

As I began this internship, a mix of excitement and nervousness filled me. After carefully exploring various options, I chose an internship that aligned with my academic focus and future career aspirations. Little did I know that this decision would lead me to a path of learning and self-discovery. From the moment I entered the internship setting, I am welcomed into a dynamic and supportive environment. The team's warmth and openness created a space where learning and growth are not just encouraged but nurtured. One of the most rewarding aspects of the internship is the chance to apply the theoretical concepts I am learning in university to real-life situations. The internship is a masterclass in skill development. It provided a platform to refine crucial skills like effective communication, time management, and collaborative teamwork. As with any journey, challenges were inevitable. However, these challenges turned out to be stepping stones for my personal growth. Overcoming hurdles taught me resilience, boosted my confidence, and equipped me with adaptability – skills that I now treasure.

The internship is also providing ample networking opportunities. Interactions with experienced professionals, mentors, and supervisors allowed me to expand my professional circle. My active participation, idea-sharing, and collaboration with team members allowed me to witness the



tangible impact of my efforts. Guidance and mentorship are pillars of my internship journey. Learning from their experiences is invaluable.

In conclusion, my first internship opportunity is a pivotal moment that bridged the gap between academia and the professional world. The experience enriched my passion for my chosen field, fortified my readiness for future challenges, and laid a strong foundation for my career ahead. This journey is a testament to the power of learning, growth, and the transformative impact of practical application.

- Vedanti Patil  
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# PROTECTING THE FUTURE OF CONNECTIVITY

The Internet of Things (IoT) has transformed the way we live and work, embedding intelligence into everyday devices. IoT encompasses a network of interconnected devices that share data and facilitate automation, from smart thermostats in our homes to autonomous vehicles on our streets. However, this interconnected ecosystem raises significant concerns about its security. With billions of devices at risk, safeguarding IoT is crucial to protect privacy, data integrity, and prevent potential disruptions.

## What is IoT Security?

IoT security or cybersecurity refers to the practices, strategies, and technologies implemented to protect IoT devices and the data they generate from unauthorized access, breaches, and cyber threats. It involves securing endpoints, networks, and data throughout the IoT ecosystem.

## Why is IoT Security Necessary?

The necessity of IoT security cannot be overstated. Unsecured IoT devices are vulnerable to hacking, leading to data theft, privacy violations, and even physical harm. Furthermore, IoT devices can be used as entry points for larger-scale attacks on critical infrastructure.

## Types of IoT Security:

- **Device-Level Security:** Securing individual devices with strong authentication, encryption, and regular firmware updates.
- **Network Security:** Implementing robust network protocols, firewalls, and intrusion detection systems.
- **Cloud Security:** Protecting data stored in the cloud through encryption and access controls.
- **User Authentication:** Ensuring only authorized users can access and control IoT devices.
- **Blockchain:** Employing blockchain for tamper-proof data records and transaction security.

## Benefits of IoT Security:

- **Privacy Protection:** Ensures that user data is not exposed or misused.
- **Reliability:** Reduces the risk of device malfunctions or attacks affecting critical systems.
- **Compliance:** Helps organizations adhere to data protection regulations.
- **Trust:** Enhances consumer trust in IoT technologies.



The scope of IoT security will continue to expand as the IoT ecosystem grows. It encompasses industries from healthcare and manufacturing to smart cities and agriculture. Leading tech companies and organizations like Arm, Intel, and NIST have made significant strides in IoT security. Arm's Platform Security Architecture, for instance, provides a comprehensive framework for secure IoT device development. Intel's Secure Device Onboard simplifies the provisioning of IoT devices, enhancing security. NIST continues to update its IoT cybersecurity guidelines, keeping pace with evolving threats. The future will likely see increased use of AI and machine learning for threat detection and response in IoT environments.

As IoT devices proliferate, their security becomes paramount. It is not just about protecting data; it is about safeguarding our interconnected world. Recent advancements and ongoing efforts by tech giants and standards organizations underscore the importance of this field. A secure IoT landscape is not an option; it is a necessity for our digital future.

**- Zoha Attar**

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**Technology is the bridge  
that connects  
imagination to reality.**

**- Vikram Sarabhai**



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