MSBTE Code: 1071
Shri. Pandurang Pratishthan Pandharpur's
DTE Code: 6326
Karmayogi Institute of Technology (Polytechnic)
Shelve-Pandharpur Solapur, Maharashtra, India
Affiliated to MSBTE, Mumbai, Approved by DTE & AICTE, Delhi, Established in 2008

Tribute to Late Shri. Sudhakarpant Paricharak
।।कर्मयोगी।।

DEPARTMENT OF COMPUTER TECHNOLOGY

TECHBITE

28 February, 2026 | Volume: 07, Issue: 02

Institute Vision

To provide affordable and quality engineering education primarily to rural communities, empowering them to become competent professionals.

Institute Mission

- To equip students with necessary technical capacity to tackle professional challenges effectively.
- To foster a conducive environment for rapid and qualitative learning.
- To provide high-quality infrastructure and facilities to students and staff.
- To consider the socio-economic status of students, enabling them to gain confidence and societal status.
- To dedicate sustained efforts towards preparing students for success in competitive examinations.

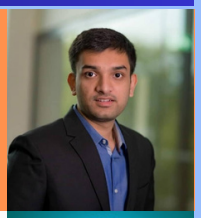
Department Vision

To attain academic excellence in computer technology and produce competent engineers with moral values.

Department Mission

- To make use of best teaching-learning methodology to impart quality education in computer technology.
- To provide a learning environment to enhance ability of students to accept latest trends in computer industry.
- To establish an industry interaction program to get exposure to corporate work culture.
- To groom our students to become followers of professional and moral practices.

From the Chairman's Desk



"Our institute is dedicated to shaping students into skilled engineers and responsible citizens. I believe that the TECHBITE newsletter will inspire and guide us towards the continued success."
– Shri. Rohan Paricharak

From The Principal's Desk

"A newsletter is a formal publication that shares academic updates, achievements, and informative content with its readers. I am confident that this newsletter will open new opportunities and pave the way towards the desired vision and mission of our Institute. Best wishes to all the stakeholders of our institute." – Dr. Ajit Kanase

From the HOD's Desk

"This journey began with a small step and has now grown stronger. The newsletter reflects the achievements, activities, and efforts of our students. I sincerely thank our Honorable Principal, Dr. A. B. Kanase Sir, for his support and encouragement. I am confident that this newsletter will open new opportunities and pave the way towards the desired vision and mission of our Department."
– Prof. Sachin Ghalame

From the Chief Editor's Desk

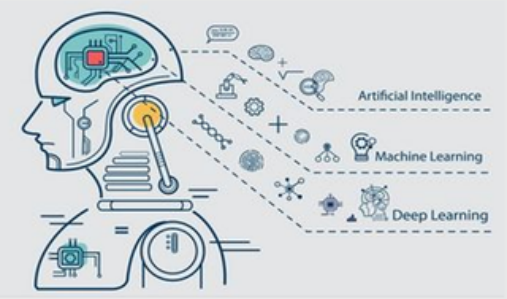
"I am delighted to present before you the latest edition of our TECHBITE Newsletter. It has been my pleasure to design and edit this issue, which reflects the academic spirit and achievements. I sincerely thank all contributors and team members for their efforts in making this issue meaningful and impactful. Happy Reading!" — Sachin Bhosale

Decoding the AI: From Subsets and Applications to Operational Realities

Introduction

Artificial Intelligence is a term you hear a lot nowadays. But what exactly is Artificial Intelligence? The term is made up of two words: “Artificial” and “Intelligence.” “Artificial” means human-made, and “Intelligence” means knowledge. So, artificial intelligence is knowledge created by humans.

Humans can create AI and give it to machines, allowing them to work like humans—speaking, making decisions, or performing tasks. Examples of AI include ChatGPT and Google Gemini, which are some of the best-known AI systems. In simple words, Artificial Intelligence is human-made intelligence that enables machines to perform tasks like humans.



1. History of Artificial Intelligence

The concept of AI started in the 1950s. In 1950, Alan Turing proposed the famous Turing Test to check whether a machine can think like a human. In 1956, the term “Artificial Intelligence” was officially coined at the Dartmouth Conference, which is considered the birth of AI as a field of study.

Early AI programs focused on problem-solving and games, while the 1980s saw the rise of expert systems used in medicine and engineering. In the 2000s, advances in big data and computing power led to modern AI, including machine learning and deep learning. Between 2020–2025, AI reached new heights with tools like ChatGPT and other generative AI systems.

2. Subfields of AI

AI has several subfields, such as Machine Learning (ML) and Deep Learning (DL). Machine Learning is a subpart of AI, and Deep Learning is a subpart of Machine Learning.

Machine Learning (ML) is a concept where machines learn from data and perform tasks on their own, similar to how humans learn from practice and experience.

For example, just like students study for exams and cricketers improve by practicing, machines analyze data to recognize patterns and improve performance. Machines learn using datasets (collections of information), which help them make decisions and complete tasks intelligently.

Natural Language Processing (NLP) is a branch of Machine Learning that enables machines to understand and process human language. It is used in applications like Spotify and YouTube to analyze user behavior and emotions, allowing AI to recommend content such as happy or sad songs based on listening patterns.

Deep Learning (DL) is a subset of Machine Learning that works with large datasets and solves complex problems. It enables machines to analyze and generate images, recognize objects, and identify people or vehicles similar to humans.

Generative AI is a type of artificial intelligence that can create new content such as text, images, music, or code. It learns patterns from large datasets and generates original outputs that resemble human-created work.

Large Language Models (LLMs) are AI systems trained on vast amounts of data to understand and generate human-like text. ChatGPT is a popular example, and LLMs are among the most powerful and advanced tools in AI today.

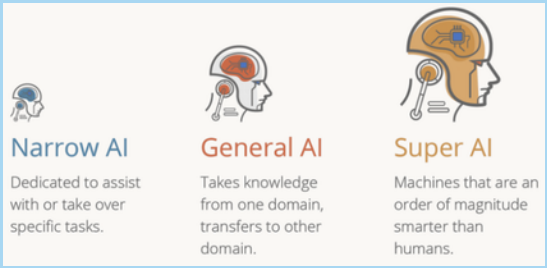
Types of AI

There are three main types of Artificial Intelligence: Narrow AI, General AI, and Super AI.

Narrow AI is designed to perform specific tasks only and is the most commonly used type of AI today.

General AI aims to perform any intellectual task that a human can do, understanding situations and responding intelligently like humans.

Super AI is a future concept where machines surpass human intelligence, capable of handling complex tasks and vast data beyond human ability.



Applications of AI

AI has many applications across different sectors:

- Cybersecurity: AI can analyze millions of potential threats faster than humans.
- Customer Services: AI provides 24/7 support for companies.
- Healthcare, Education, Finance, and Cooperative Sectors: AI helps in decision-making, analysis, and efficiency.

Task-specific applications: AI can develop apps or automate repetitive work.

Advantages of AI

1. Performs more work in less time.
2. More accurate than humans and less prone to errors.
3. Works faster and continuously without fatigue.
4. Reduces the cost of human labor for repetitive tasks.

Disadvantages of AI

1. Not completely secure; may be vulnerable to attacks.
2. Excessive reliance on AI can make humans lazy.
3. Cannot guarantee 100% correct results in every situation.

Conclusion

Artificial Intelligence is a powerful technology that improves productivity, accuracy, and efficiency in many fields. It helps automate tasks, analyze large amounts of data, and make faster decisions. AI is widely used in industries like healthcare, education, business, and entertainment. However, it also has limitations and potential risks if not used responsibly. Therefore, AI should be developed and applied carefully while maintaining security and ethical standards.

ADITYA A. KULKARNI, TY

Blockchain Technology: A Secure and Decentralized Digital Framework

Abstract

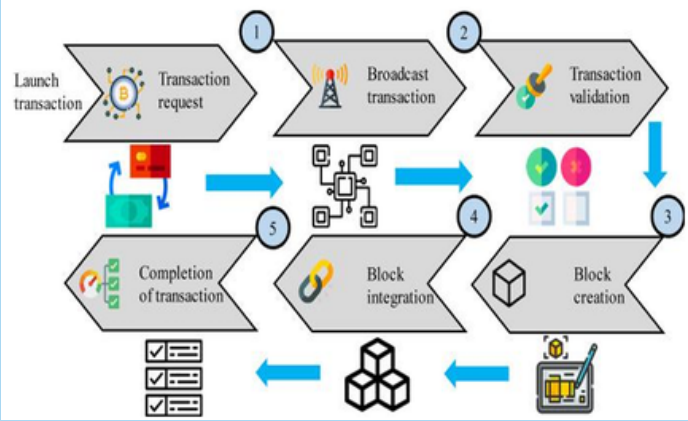
Blockchain technology is an innovative digital framework that enables secure, transparent, and decentralized data management. By eliminating reliance on centralized authorities, blockchain introduces a trust-based system built on cryptography, distributed consensus, and immutable records. This article explains the fundamental structure, operational principles, security mechanisms, and practical applications of blockchain technology in modern computing environments.

Introduction

In traditional digital systems, data storage and transaction validation are controlled by centralized entities such as banks, servers, or administrative authorities. These systems often face challenges related to transparency, security, and trust. Blockchain technology addresses these limitations by introducing a decentralized ledger where transactions are recorded and verified across a distributed network of computers. This approach ensures that data remains consistent, verifiable, and resistant to unauthorized modification.

Operational Workflow

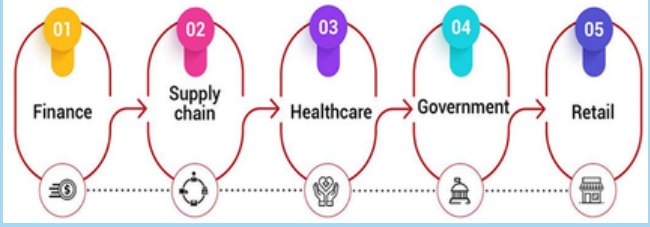
When a transaction is initiated, it is broadcast to all participating nodes in the network. These transactions are collected and organized into a block. Before the block is added to the chain, it must be validated through a consensus mechanism. Once consensus is achieved, the block is appended to the existing chain and shared across the network. This distributed verification process ensures accuracy, prevents duplication, and eliminates the need for intermediaries. Any attempt to modify previously recorded data would require recalculating all subsequent blocks, making such manipulation computationally impractical.



Applications of Blockchain Technology

Beyond cryptocurrencies, blockchain is used in supply chain management and healthcare record systems.

It is also applied in digital identity verification, electronic voting, and financial services. Its transparency, security, and traceability make it highly valuable in systems that require trust and accountability.



Conclusion

Blockchain technology represents a transformative shift in the way digital systems manage trust, security, and data integrity. By combining decentralization, cryptographic protection, and consensus-based validation, blockchain provides a robust foundation for secure digital interaction. As scalability and interoperability challenges continue to be addressed, blockchain is expected to play a critical role in the future development of secure, transparent, and efficient digital infrastructures.

TANISHKA VYAVAHARE, TY

Blockchain is revolutionizing India

We are living in the Web3 era, the next generation of the internet where users can not only read and write but also execute transactions online. One of the core technologies powering this era is Blockchain. Blockchain is a decentralized and distributed digital ledger that records transactions in a secure, transparent, and immutable way. It consists of blocks that store data and are linked together using cryptographic hashing to form a chain-like structure. Each computer in the network, called a node, maintains a copy of the ledger, and new transactions are validated through consensus mechanisms like Proof of Work or Proof of Stake by miners.

Examples of Blockchain

Banking and Finance: User 1 from India can directly send money to User in USA through digital wallet like MetaMask within seconds or minutes. India's Reserve bank of India (RBI) has started pilot project Central Bank Digital Currency (CBDC) using digital wallets where transactions occur without physical money.

Governance and Policy: Suppose Central Government has passed bill of 200 crore rupees for making roads in India - Case 1 Without Blockchain: Multiple agencies involved like contractor, supplier, government departments etc. This slows transaction and delay due to many intermediates increasing chances of corruption and mismanagement.

Case 2 With Blockchain: Smart contract to automate release of payments only when predefined milestones are achieved ensuring transparent transactions to public.

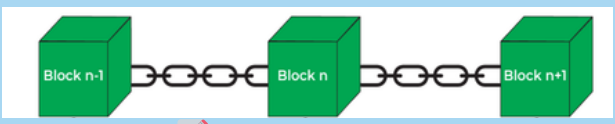
Identity Management: SIM card fraud in 2016-2019 - Globally Telecom companies saw spike in SIM swapping and SIM cloning frauds by criminals for unauthorized activities. This was due to centralized database for KYC and identity verification.

Solution for this involves shared block chain identity registry maintaining tamper-proof KYC records across all telecom providers where users can control digital identity using Self Sovereign identity (SSI).

Land Registry and property management: Telangana has started block chain project to manage land records, transparent property transactions and smart contracts for reducing fraud and corruption.

Healthcare: This involves securing patient data, drug and supply chain management, medical billing and claims, public health records etc.

All above are just examples. There are numerous ways through which Block chain is implemented in real systems. In summary, Block chain is not just a technological innovation but a powerful tool for inclusive growth and governance reform for developing countries like India



ISHWARI MUDEGAONKAR, TY

FY Toppers AY - 2025-2026 (MSBTE Winter Exam)

BHOSALE KIRTI DATTATRAY
93.65%

SALUNKHE SIDDHI POPAT
93.18%

GORE VAISHNAVI TATYASO
91.77%

SY Industrial Visit - 10/01/2026
Sumago Infotech Pvt. Ltd., Nashik

SY Toppers AY - 2025-2026 (MSBTE Winter Exam)

PAWAR PAYAL VIJAY
97.41%

JAMDADE VAISHNAVI KALIDAS
95.77%

SHINDE PAYAL SANTOSH
95.06%

SY Industrial Visit - 07/02/2026
iGAP Technologies Pvt. Ltd., Kolhapur

TY Toppers AY - 2025-2026 (MSBTE Winter Exam)

MUDEGAOKAR ISHWARI JAGDISH
97.18%

PAWAR NAMRATA ARVIND
96.94%

KHEDEKAR ISHWARI DHANJAY
96.47%

SY Industrial Visit - 21/02/2026
Multispark Pvt. Ltd., Kolhapur

Expert Guest Lectures

Abhijit Gatade
'Recent trends in Computer Technology'
20/12/2025 - Class SY

Dr. Ajitkumar Shitole
'Role of Data structure in Machine Learning'
14/02/2026 - Class TY

📌 Upcoming Event - TECHSTEP 2K26 - 07/03/2026

KARMAYOGI

Our Pillars

- Shri. Rohan Paricharak, Chairman
- Dr. Ajit Kanase, Principal
- Shri. G. D. Walake, Registrar
- Karmayogi Management Team

TH EDITORIAL TEAM

Computer Technology