

MONTHLY INSIGHTS

OCTOBER 2023

DEPARTMENT OF INFORMATION TECHNOLOGY



Departmental Vision statement of Information Technology

To nurture the joy of excellence in the world of Information Technology

Departmental Mission statements of Information Technology

M1: To develop the critical thinking ability of students by promoting interactive learning.

M2: To bridge the gap between industry and institute and give students the kind of exposure to the industrial requirements in current trends of developing technology.

M3: To promote learning and research methods and make them excel in the field of their study by becoming responsible while dealing with social concerns.

M4: To encourage students to pursue higher studies and provide them awareness on various career opportunities that are available.



ARTICLES

UPI ATM - The Next Step in Digital Banking Evolution

The banking landscape in India took a significant leap forward with the recent launch of the UPI ATM, an innovative solution that enables cash withdrawals without the need for a physical debit or credit card. Hitachi Payment Services, a subsidiary of Japan-based Hitachi, joined forces with the National Payments Corporation of India (NPCI) to introduce this groundbreaking technology at the Global Fintech Fest in Mumbai.

A New Era in Banking:

The UPI ATM is set to revolutionise traditional banking services by seamlessly integrating the convenience and security of UPI (Unified Payments Interface) into traditional ATM machines. UPI, a mobile payment method managed by NPCI, has already transformed the way Indians transfer funds, making transactions between bank accounts instant and free.

With the introduction of the UPI-ATM, customers can now access cash quickly and easily, even in remote areas of India, without the need for a physical card. This innovative concept is poised to enhance financial inclusivity and accessibility for millions across the country.

How the UPI ATM Works:

The process of using the UPI ATM is straightforward and user-friendly. Here's how it works:

- Selection of UPI Cash Withdrawal: When a customer arrives at the ATM, they have the option to select "UPI cash withdrawal."
- Entering the Withdrawal Amount: After selecting the option, the customer enters the desired withdrawal amount.



- **Dynamic QR Code Display:** Once the withdrawal amount is entered, a single-use dynamic QR code (signed) is displayed on the ATM screen.
- **Scanning the QR Code:** To proceed with the transaction, the customer needs to scan the QR code using any UPI mobile application (UPI APP).
- **Authorization with UPI PIN:** After scanning the QR code, the customer authorises the transaction by entering their UPI PIN on the mobile app (UPI APP).
- **Cash Withdrawal:** With the successful authorization, the ATM dispenses the requested amount in cash.



Key Features of the UPI-ATM

This pioneering UPI-ATM service comes with several key features that enhance the banking experience for customers:

- **Accessibility:** The UPI-ATM ensures quick access to cash, bridging the gap in banking services, especially in remote areas.
- **Security:** The integration of UPI ensures secure transactions, with the added layer of authentication through the UPI PIN.
- **No Physical Cards:** Customers no longer need to carry physical debit or credit cards to access their funds.



- **Instant Transactions:** As with all UPI transactions, the process is swift, and the funds are transferred instantly.
- **Financial Inclusivity:** The UPI ATM promotes financial inclusivity by making banking services more accessible to a wider population.

The Future of Digital Banking

The introduction of the UPI ATM marks a significant milestone in India's journey toward a digital-first banking ecosystem. As technology continues to advance, we can anticipate further innovations in the banking sector, making financial services more accessible, secure, and convenient for all.

In conclusion, the UPI ATM is a testament to the power of collaboration between technology companies like Hitachi Payment Services and regulatory bodies like NPCI. It represents a shift toward a more inclusive and digital banking future, where traditional barriers are dismantled, and financial services become more accessible to all.

Gaurav Vengurlekar



BE IT

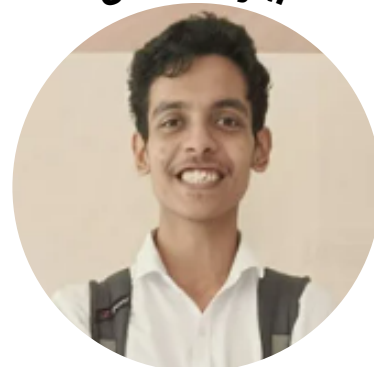


Blockchain in a Nutshell : Transforming Data Security and Beyond in the Digital Age

Blockchain is a record-keeping technology designed to make it impossible to hack the system or forge the data stored on it, thereby making it secure and immutable. It is a type of distributed ledger technology (DLT), a digital system for recording transactions and related data in multiple places at the same time. Each computer in a blockchain network maintains a copy of the ledger to prevent a single point of failure, and all copies are updated and validated simultaneously. Blockchain is also considered a type of database but differs substantially from conventional databases in how it stores and manages information. Instead of storing data in rows, columns, tables and files as traditional databases do, blockchain stores data in blocks that are digitally chained together. In addition, a blockchain is a decentralized database managed by computers belonging to a peer-to-peer network instead of a central computer like in traditional databases. The cryptocurrency Bitcoin, launched in 2009, was the first popular application to successfully use blockchain. As a result, blockchain has been most often associated with Bitcoin and alternatives such as Dogecoin and Bitcoin Cash. Logistics companies use blockchain to track and trace goods as they move through the supply chain. Government central banks and the global financial community have been testing blockchain technology as a foundation for digital currency exchange. And various industries, including the legal community and entertainment, are using blockchain as the basis for smart contracts and other mechanisms for transferring and protecting intellectual property rights.

In fact, many industries are now exploring blockchain-based applications as a secure and cost-effective way to create and manage a distributed database and maintain records for digital transactions of all types. As a result, blockchain is increasingly viewed as a solution for securely tracking and sharing data between multiple business entities. Experts cite several key benefits to using blockchain. Security is probably the most significant advantage. It is almost impossible to corrupt a blockchain because the information is shared and continually reconciled by thousands, even millions, of computers. Blockchain also has no single point of failure. Transactions can be more efficient than in non-DLT-based transactional systems, though public blockchains can sometimes suffer from slow speed and inefficiency. It's resilient: There is no problem if one node goes down because all the other nodes have a copy of the ledger. It provides trust between participants on a network. Confirmed blocks are very difficult to reverse, which means data is difficult to remove or change. Experts say blockchain also has potential drawbacks, risks and challenges. With public blockchains, there are questions about ownership and who is responsible when problems arise.

Salil Gujar



TE IT

Virtual Reality

The virtual reality gaming industry have revealed that humans are open to the idea of getting away from the real world. Virtual Reality (VR) is modifying how you use screens to unlock the door to engaging experiences, where a user temporarily goes into a different reality .



VR and AR create and augment a captivating virtual environment and real-world scene. Virtual Reality places you inside a computer-generated landscape using a headset from the comfort of your home. Meanwhile, Augmented Reality takes digital elements and puts them in the surroundings with the help of a smartphone. Many various technologies are being developed to deliver a real immersive experience.

IT plays an important role in the development and implementation of Virtual Reality (VR) technology. The integration of IT with VR enables the creation, delivery, and helps in an immersive experience.



Firstly, IT infrastructure is essential for powering VR experiences. High-performance computers, servers, and networks are required to handle the intensive processing and data transfer demands of VR content. IT professionals ensure the smooth operation and working of these systems, making sure users can immerse themselves seamlessly in virtual worlds (VR).

Secondly, IT contributes to the development of VR software and applications. Programmers and software engineers utilize IT skills to design and code the software that runs the VR system. This includes creating realistic graphics, interactive environments, and realistic experience. IT is involved in the storage and management of vast amounts of VR data. VR experiences generate a significant amount of data. IT experts employ data management techniques, cloud storage solutions, and data analytics to efficiently store, retrieve, and analyse this data

Lastly, IT plays a crucial role in ensuring the security and privacy of VR systems. As VR technology becomes more interconnected with the internet, IT professionals implement robust cybersecurity measures to protect VR platforms from potential threats, safeguard user data, and prevent unauthorized access.

In summary, IT is closely intertwined with the development, infrastructure, software, data management, and security aspects of Virtual Reality. Its presence is fundamental to creating immersive and secure VR experiences.

Virtual technology has made significant progress with the help of IT. The advancements in IT have provided the necessary tools to push the boundaries of Virtual Reality (VR) and enhance the overall VR experience.



Some of the advantages of the developments made with IT are as follows:-

1. **Computing Power:** IT has provided powerful processors, graphics cards, and memory capacities, enabling realistic graphics and complex simulations in VR.
2. **Networking:** IT has improved networks, like 5G, for allowing real-time interactions in VR.
3. **Software Development:** IT professionals contribute programming skills to develop immersive VR applications and optimize performance helps in providing a user interface.
4. **Data Management:** IT develops data management systems and uses analytics to handle the massive amounts of data generated by VR.
5. **Security and Privacy:** IT ensures the security of VR systems, protecting against cyber threats and protects the data.

These developments in IT have elevated the VR experience, making it more immersive, active, and secure.

Janaki Bai



SE IT



ACADEMICS

Mini-Project Exhibition

A web-Based Mini project exhibition of the TE IT class was organised by the Information Technology department on Thursday, 12th October 2023 from 1:30 pm to 3:30 pm at the Computer Center. Students exhibited their projects developed using various tools & technologies like HTML, CSS, JS, React, Bootstrap, Mongo DB etc. Prof Sulochana Devi and Prof. Sayali Mane were judges for the event. The winners were:

1st place : Event Management System

by Mangesh Pangam, Rakshita Sarap, Saish Rane, and Divyajothi Raja

2nd place : CodeVerse (A coding exercise platform)

by Akib Sayed, Ishan Vaghela, Shubham Sharma, and Neha Yadav

sharing the 2nd place : XIE-FESTS

by Harshit Jain, Parth Choudhary, Mohtashim Shaikh, and Harshvardhan Gupta.





ACHIEVEMENTS



Prof. Chhaya Narvekar conducted a one-day workshop on “Network Simulator NS2, NS3” on 9th October 2023 at Smt. Indira Gandhi College of Engineering. She also presented a paper titled “Fruit and Vegetable grading with transfer learning and convolutional neural networks for better productivity” at the 3rd International Conference on Advanced Computing Technologies and Applications 2023 by DJ Sanghvi College of Engineering on 6th and 7th October 2023

Industrial Aspects of Scripting Languages

Prof. Martina D'souza delivered an expert session to the SE IT class on the topic: "Industrial Aspects of Scripting languages" on 12th October 2023. The activity was coordinated by Prof. Jaya Jeswani.



OUR AMAZING CREW

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