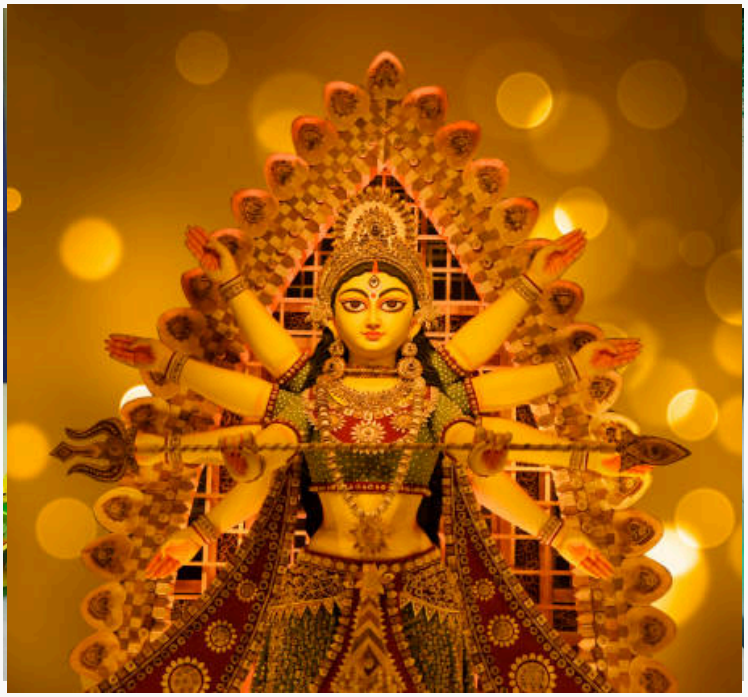
VISHWAKARMA INSTITUTE OF TECHNOLOGY, PUNE

AI&DS Insights

Monthly Awareness Bulletin

ISSUE 03 | November 2024

"We cannot solve problems with the kind of thinking we employed when we came up with them."



Navaratri

Female faculty members from the Artificial Intelligence and Data Science department embraced the festive spirit of Navratri by coordinating colorful sarees for each day of the celebration. This unique and vibrant display, shared across nine days, not only honored tradition but also highlighted the unity and enthusiasm within the department. Each day's color symbolized different values and energies associated with Navratri, beautifully captured and featured in the local newspaper daily. The initiative brought a sense of joy and solidarity, making the festival memorable for the entire department.

TOON

Student Achievement

Sanchit Paranjape, a final-year student of the AIDS department, has been selected to represent India at the prestigious Asia 7s Football League. The tournament will be held from October 28th to November 1st at the Patong Football Stadium in Phuket, Thailand, and is organized by Yuvha Games.

Sanchit's club earned the runners-up position at the national qualifiers held in Ahmedabad, securing their spot in this international event. Competing against some of the most skilled teams from across Asia, Sanchit will be showcasing his talent and dedication on an international platform, bringing pride to our institution and to the country.

Faculty Article

Digital therapeutics (DTx), which provide software-based health interventions, are rapidly advancing healthcare. However, effective DTx requires seamless data integration from various sources, a challenge addressed by the Semantic Web. This study explores how Semantic Web tools, like the Resource Description Framework (RDF) and Web Ontology Language (OWL), enhance data interoperability, allowing diverse health data to integrate and support more personalized care.

Key applications include improving data sharing across healthcare systems, creating patient-specific profiles for tailored treatments, and ensuring compliance with privacy regulations like GDPR and HIPAA. For example, a mental health DTx program combined wearable and EHR data to personalize Cognitive Behavioral Therapy, while a diabetes management app used ontologies to deliver real-time insulin and diet recommendations.

Despite challenges like complex ontology development and privacy concerns, the Semantic Web holds promise for advancing DTx. Future efforts will focus on improving these technologies, paving the way for healthcare that is both more connected and customized to individual needs.

Dr Shital Kakad
Assistant Professor
AI&DS

Faculty Publication

We are thrilled to celebrate the exceptional achievements of our esteemed faculty member, Shiela Ma'am, who has recently published four innovative patents in the past month. Her remarkable contributions to research and innovation reflect her dedication to pushing the boundaries of knowledge within our department and beyond.

Shiela Ma'am's commitment to her field is evident not only in her research endeavors but also in her willingness to inspire and guide students and colleagues alike. Her work exemplifies the spirit of innovation and excellence that we strive for, and her recent accomplishments serve as a source of motivation for all of us.

We extend our heartfelt congratulations to Shiela Ma'am on this incredible milestone, recognizing her invaluable contributions to both academia and industry. Let us celebrate her success and look forward to the continued impact her research will have in advancing our collective mission.

The four patents are:

- 202421075626: ROOM MAPPING USING IOT BASED ROBOT AND UNITY.
- 202421077210: IOT BASED SELF-ADAPTIVE TRAFFIC MANAGEMENT SYSTEM
- 202421075639: IOT BASED MANHOLE MONITORING SYSTEM
- 202421075634: IOT BASED SMART WATER-TANK

Topic of the Month

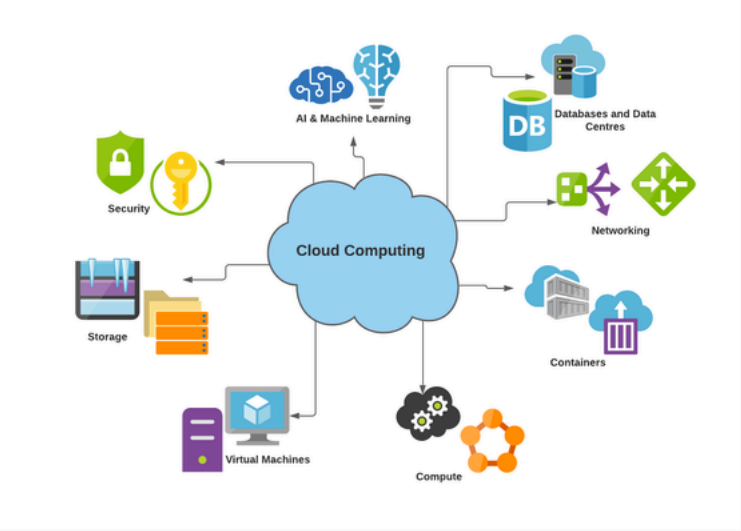
Cloud Computing

As an Artificial Intelligence and Data Science student—and an unabashed Apple enthusiast—I've come to appreciate how cloud computing serves as the backbone of the technologies we use and develop. Cloud computing isn't just a buzzword; it's the engine that powers everything from complex machine learning models to the seamless integration of services across devices. In this article, I'll explore what cloud computing is, why it's essential for our field, its current applications, future prospects, and how Apple's Private Cloud Compute is setting new standards in the industry.

What is Cloud Computing?
At its core, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the internet ("the cloud") to offer faster innovation, flexible resources, and economies of scale. Instead of investing in and maintaining physical data centers, organizations—and yes, even students like us—can access technology services on an as-needed basis from cloud providers.

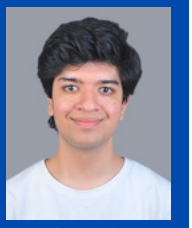
Why is Cloud Computing Important?
Scalability and Flexibility:
One of the most exciting aspects of cloud computing is its ability to scale resources up or down based on demand. For AI and Data Science projects that often involve massive datasets and computationally intensive algorithms, this scalability is a game-changer.
Cloud platforms are accessible from anywhere, facilitating collaboration among teams spread across different locations. This is particularly beneficial for our field, where diverse perspectives often lead to groundbreaking insights.

Current Uses in AI and Data Science
Machine Learning Platforms:
Cloud providers like AWS, Azure, and Google Cloud offer machine learning platforms with pre-built algorithms, automated tuning, and easy deployment, allowing us to focus on model refinement.
Big Data Analytics:
The cloud supports efficient storage and processing of large datasets with managed services like Hadoop and Spark, enabling complex analysis without infrastructure hassle.
scratch.
Collaborative Development Environments:
Cloud-based platforms like Jupyter Notebook and Google Colab offer interactive, collaborative coding environments crucial for AI and data science teamwork.



Future Applications
Edge Computing Integration:
The fusion of cloud computing with edge devices is set to revolutionize real-time data processing. For applications requiring minimal latency, such as autonomous vehicles or live analytics, this integration offers both speed and computational heft.
Quantum Computing:
As quantum computing becomes more accessible, cloud platforms may start offering quantum services. This could exponentially boost computational capabilities, unlocking new possibilities in AI and Data Science.
Enhanced Security with AI
AI-powered security enhancements by cloud providers will use machine learning to detect anomalies and threats in real-time, boosting data integrity.
AI-as-a-Service (AIaaS):
The rise of AIaaS could make advanced analytics tools available to a broader audience. This democratization has the potential to accelerate innovation and level the playing field in our industry.

References :
https://www.zdnet.com/article/what-is-cloud-computing-everything-you-need-to-know-about-the-cloud/



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