PRAGATI ENGINEERING COLLEGE (AUTONOMOUS)

Approved by ACITE,New Delhi & Permanently Affilicated to JNTUK,Kakinada &Accredited By NAAC with 'A' Grade

SUTANTRA

- INFORMATION FOR ENLIGHTENING

DEPARTMENT OF INFORMATION TECHNOLOGY

About IT department

The Department of IT was established in the year 2001 to groom the students for the requirements of IT industry. The Department has emerged as a reputed center of learning in the coastal districts of Andhra Pradesh. Footprints of the department´s students can be found in most of the local and global software majors. Student of this department mainly, brought glory to the college by securing University Rank.

The department strives to empower the students, to achieve the demanding standards of IT industry, by bringing about a synergistic academic environment wherein cutting edge technologies, industry experts, faculty and students are engaged in a sustained interaction.

Vision of the College

To Emerge as a Premier Institution for Technical Education in the Country through Academic Excellence and to be Recognized as a Center for Excellence in Research & Development, catering to the needs of our Country.

Mission of the College

To realize a strong Institution by consistently maintaining State-of-art-infrastructure and building a cohesive, World Class Team and provide need based Technical Education, Research and Development through enhanced Industry Interaction.

Department Vision

To attain academic excellence in the field of Information Technology and research serving to the needs of the society through technological developments.

Department Mission

- To create stimulating learning ambiance by providing state-of-art infrastructure and to induce innovative and problem-solving capabilities to address societal challenges.
- To impart quality technical education with professional team to make the graduates globally competent to IT Enabled Services.
-To strengthen industry-academia relationship for enhancing research capabilities.

DEPARTMENT OF IT

PEOs for B.Tech IT Programme

PEO1:

Students will have successful career in IT as researchers, entrepreneurs and IT professionals satisfying the needs of the society.

PEO2:

Students will exhibit inclination towards higher education and continuous learning process.

PEO3:

Students will practice ethical behavior in IT industry with effective soft skills essential to work in teams.

PSOs for B.Tech IT Programme

PSO1:

Develop software programs in various programming languages learnt to create the software applications to solve the real life problems of the society.

PSO2:

Excel in emerging software tools and technologies.

PSO3:

Effectively transform their ideas and bring consensus for the transformation of the idea into a usable software product / application.

DEPARTMENT OF IT

Program Outcomes (POs)

1. Engineering knowledge:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis:Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: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.

4. Conduct investigations of complex problems: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.

5. Modern tool usage:Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: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.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics:Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: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.

DEPARTMENT OF IT

John McCarthy

John McCarthy (September 4, 1927 – October 24, 2011) was an American computer scientist and cognitive scientist. McCarthy was one of the founders of the discipline of artificial intelligence He co-authored the document that coined the term "artificial intelligence" (AI), developed the Lisp programming language family, significantly influenced the design of the ALGOL programming language, popularized time-sharing, invented garbage collection, and was very influential in the early development of AI.

He received many accolades and honors, such as the 1971 Turing Award for his contributions to the topic of AI, the United States National Medal of Science, and the Kyoto Prize.

McCarthy often commented on world affairs on the Usenet forums. Some of his ideas can be found in his sustainability Web page, which is "aimed at showing that human material progress is desirable and sustainable". McCarthy was a serious book reader, an optimist, and a staunch supporter of free speech.

McCarthy saw the importance of mathematics and mathematics education. His Usenet .sig for years was, "He who refuses to do arithmetic is doomed to talk nonsense"; his license plate cover read, similarly, "Do the arithmetic or be doomed to talk nonsense."

His 2001 short story "The Robot and the Baby" farcically explored the question of whether robots should have (or simulate having) emotions, and anticipated aspects of Internet culture and social networking that have become increasingly prominent during ensuing decades.

Honors and awards of John McCarthy

1. Turing Award from the Association for Computing Machinery (1971).
2. Kyoto Prize (1988).
3. National Medal of Science (USA) in Mathematical, Statistical, and Computational Sciences (1990).
4. Inducted as a Fellow of the Computer History Museum "for his co-founding of the fields of Artificial Intelligence (AI) and timesharing systems, and for major contributions to mathematics and computer science". (1999)
5. Benjamin Franklin Medal in Computer and Cognitive Science from the Franklin Institute (2003).
6. Inducted into IEEE Intelligent Systems' AI's Hall of Fame (2011), for the "significant contributions to the field of AI and intelligent systems".
7. Named as one of the 2012 Stanford Engineering Heroes.

THE EVOLVING TECNOLOGIES

QUANTUM COMPUTING:

Next remarkable technology trend is quantum computing, which is a form of computing that takes advantage of quantum phenomena like superposition and

quantum entanglement. This amazing technology trend is also involved in preventing the spread of the coronavirus, and to develop potential vaccines, thanks to its ability to easily query, monitor, analyze and act on data, regardless of the source. Another field where quantum computing is finding applications is banking and finance, to manage credit risk, for high-frequency trading and fraud detection. The revenues for the global quantum computing market are projected to surpass $2.5 billion by 2029.

3D PAINTING:

A key trend in innovation and technology is 3D printing which is used to formulate prototypes. This technology has been impactful in the biomedical and industrial sectors. , it's a reality. So, 3D printing is another innovation that's here to stay. For companies in the data and healthcare sector that require a lot of 3D printing for their products, various jobs pay well and are international. All you need is a sound knowledge of AI, Machine Learning, Modeling, and 3D printing.

GEONOMICS:

Imagine a technology that can study your DNA and use it to improve your health, helping you fight diseases and whatnot! Genomics is precisely that technology that peruses upon the make-up of genes, DNAs, their mapping, structure, etc.
Further, this can help quantify your genes and result in finding diseases or any possible problems that can later be a health issue.

DATAFICATION:

Datafication is simply transforming everything in our life into devices or software powered by data. So, in short, Datafication is the modification of human chores and tasks into data-driven technology. From our smartphones, industrial machines, and office applications to AI-powered appliances and everything else, data is here to stay for longer than we can ever remember! So, to keep our data stored the right way and secure and safe, it has become an in-demand specialization in our economy.

Virtual Reality & Augmented Reality:

Both Augmented Reality (AR) and Virtual Reality (VR) have been around for quite some time, but the technologies behind them are continuously being perfected. This allows the arrival of more practical applications for both VR and AR.

While VR and AR are the most prominent in the entertainment (especially gaming) industry, but practical and useful applications across various industries has been implemented.VR can also be a viable, more cost-efficient solutions for vocational training (i.e. military training), and can also provide solutions for the expensive customer service industry as an upgrade from chatbots

Robotic Process Automation:

Robotic Process Automation isn't just about robots. It is a lot more about the automation of processes than anything else. Before computers, most processes involved some human intervention. Humans ran even manufacturing machines, and large-scale manufacturing employs thousands of people. However, since computers have taken over most processes, manufacturing hasn't been left untouched either. All domains, be it manufacturing or information technology, now involve some automation in their processes.

5G:

If there is one technology, the knowledge of which is still little, it is 5G. It is a new technology in 2022 for which companies and governments around the world have spent years preparing for the rollout of 5G technology. In several countries, this technology has already been rolled out and achieved a significant amount of success. Since 5G is currently in a nascent stage,

The number of compatible devices with 5G is also not appreciable, although most new mobile devices being released have 5G compatibility. 5G has a much greater capacity than the current 4G technology,

Edge Computing:

The demand for edge computing devices is steadily growing due to the large volumes of data that enterprises produce and need to analyze. The essence of edge computing is that data processing nodes are situated closer to data sources and consumers. Obviously, this is a quicker and more efficient way to gain valuable insights than transferring raw data to centralized platforms.

TRENDING TECHNOLOGIES

01.Artificial Intelligence and Machine Learning

An "intelligent" computer uses AI to think like a human and perform tasks on its own. Machine learning is how a computer system develops its intelligence.

One way to train a computer to mimic human reasoning is to use a neural network, which is a series of algorithms that are modeled after the human brain**.**
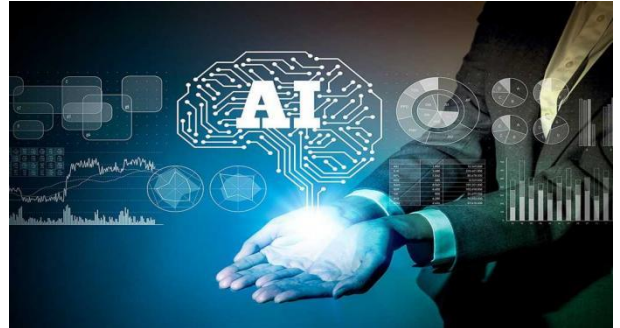
02 .Blockchain Technology

Blockchain is **a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network**. An asset can be tangible (a house, car, cash, land) or intangible intellectual property, patents, copyrights, branding).

03,Cyber Security

Cyber security is **the application of technologies, processes, and controls to protect systems, networks, programs, devices and data from cyber attacks**. It aims to reduce the risk of cyber attacks and protect against the unauthorised exploitation of systems, networks, and technologies.

04.Datafication

Datafication refers to the collective tools, technologies and processes used to transform an organization to a data-driven enterprise. This buzzword describes an organizational trend of operations through a global reliance on data and its related infrastructure.

05.Internet of Things(IOT)

The Internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks. Internet of things has been considered a misnomer because devices do not need to be connected to the public internet, they only need to be connected to a network and be individually addressabl

LATEST TECHNOLOGIE

ARTIFICIAL INTELLIGENCE

TRENDING

- Internet of Things (IoT)
- Intelligent Apps.
- 5G.
- Machine Learning.
- Blockchain.
- Cognitive Computing.
- Augmented Reality/Virtual Reality.
- DevOps.

MAGAZINE

2022

Technology is best when it brings people together

TECHNOLOGY

Technology is an ever-evolving root term, and whatever technology is in use right now, can be covered under the current technology trend. And for the technologies that are anticipated to

catch up in the future can be credited as the upcoming technology trend.

How Technology Helps Us in Our Daily Lives?

- Improved Communication
- Decreased Privacy
- Accessible Shopping
- Better Information Access
- Virtual Social Lives
- Flexible Working
- Smarter Health Tracking

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