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Department of

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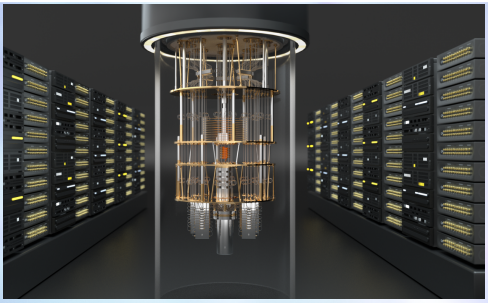
Byte Quest



QUANTUM COMPUTING

ROBOTIC PROCESS AUTOMATION(RPA)

BIG DATA

CRYPTO CURRENCY- BITCOIN

Department Vision

To be a center for academic excellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.

Department Mission

To enable students to develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.

FACULTY COORDINATORS

S. KOMAL KAUR (ASST. PROFESSOR)
T. NISHITHA (ASST. PROFESSOR)

STUDENT COORDINATORS

4TH YEAR

K. ANISHA(CSE-B)
ABHINAV (CSE-A)

3RD YEAR

AKASH(CSE-C)
IMRAN MIRZA(CSE-A)
NISCHALA (CSE-B)

2ND YEAR

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SATWIKA(CSE-A)
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QUANTUM COMPUTING

Quantum computing harnesses the phenomena of quantum mechanics to deliver a huge leap forward in computation to solve certain problems. Till now, we've relied on supercomputers to solve the most complex problems. These are very large classical computers, often with thousands of classical CPU and GPU cores.

However, these aren't very good at solving certain types of problems, which seem easy at first glance. This is the reason why we need quantum computers.Quantum computers perform calculations based on the probability of an object's state before it is measured - instead of just 1s or 0s - which means they have the potential to process exponentially more data compared to classical computers.

The heart of a quantum computer are quantum bits or qubits which can store information in quantum form.

Some of the critical problems that could be solved via quantum computing are - improving the nitrogen-fixation process for creating ammonia-based fertilizer, creating a room-temperature superconductor, removing carbon dioxide for a better climate, creating solid-state batteries etc.,

ROBOTIC PROCESS AUTOMATION (RPA)

Robotic process automation (RPA) is a software technology that makes it easy to build, deploy, and manage software robots that emulate humans' actions interacting with digital systems and software.

Just like people, software robots can do things like understand what's on a screen, complete the right keystrokes, navigate systems, identify and extract data, and perform a wide range of defined actions. But software robots can do it faster and more consistently than people. RPA is not AI, but the combination of both unlocks massive new possibilities for enterprises everywhere.

RPA streamlines workflows, which makes organizations more profitable, flexible, and responsive. It also increases employee satisfaction, engagement, and productivity by removing mundane tasks from their workdays.

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BIG DATA

Big data is a term that describes the large volume of data - both structured and unstructured - that inundates a business on a day-to-day basis. But it's not the amount of data that's important. It's what organizations do with the data that matters. Big data can be analysed for insights that lead to better decisions and strategic business moves.

Volume, velocity, variety, veracity and value are the five keys to making big data a huge
business, commonly known as the 5 V's of Big Data.

Volume, highlights the amount of data that passes through the business day in and day out and how each of the data items needs to be captured to make a holistic sense of the business to derive value out of it. Velocity in Big Data refers to the crucial characteristic of capturing data coming in at any speed. Big Data systems are equipped to capture this data at the rate at which it is coming in. If the speed does not match up to the speed at which data is coming in, there will be frequent backlogs, ultimately choking the system.

Variety is the characteristic of Big Data to capture anything and everything of value in the business ecosystem. This includes data with no immediate value to derive but can be processed further with advanced tools to gain insights into building intelligence into the system. Veracity is the trustworthiness of the source's data, the quality of the data derived after processing. The most important V as far as the business goes is Value. If the Big Data system cannot derive value out of the whole exercise in a reasonable amount of time, it isn't a worthwhile exercise to get involved in for the business. Big Data theoretically should give you value.

Analysis of big data allows analysts, researchers and business users to make better and faster decisions using data that was previously inaccessible or unusable. Businesses can use advanced analytics techniques such as text analytics, machine learning, predictive analytics, data mining etc., to gain new insights from previously untapped data sources independently or together with existing enterprise data.

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CRYPTO CURRENCY BITCOIN

Bitcoin, presently the most popular cryptocurrency, was developed by a group of people or maybe a single person with the pseudonym Satoshi Nakamoto whose identity is unknown till date. It uses decentralized networks based on blockchain technology- a ledger is distributed to everyone and all the transactions are noted and updated in those ledgers. It makes use of peer-to-peer technology to facilitate the payments.

Unlike the regular currency transactions, bitcoin uses blockchain technology where no third-party entity steps in. Once this transaction is made, this transaction is updated in everyone's ledger. The bitcoin transfers are secured by public and private keys using which a digital signature, nearly impossible to duplicate, is created.

The data in these blocks, in which transactions are stored, are made secure by proof of work and stake so that no one could manipulate the data. Bitcoin miners constantly listen to all the transactions being made all over the world. If a miner creates a block, he will be receiving few bitcoins as reward.

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