BYTE QUEST

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Contents:

Byte Quest is the article published by the CSE dept of Vasavi College of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

 Good, bad or indifferent if you are not investing in new technology, you are going to be left behind.

-Philip Green

 Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

-Stewart Brand

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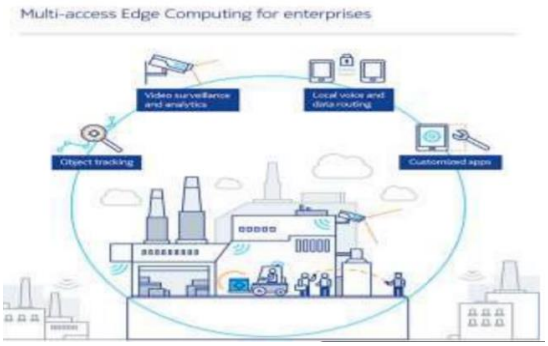
EDGE COMPUTING



Edge computing is a distributed computing paradigm in which computation is largely or completely performed on distributed device nodes known as smart devices or edge devices as opposed to primarily taking place in a centralized cloud environment. Edge computing basically tries to provide low latency by processing closer to the source of data collection. Internet of Things devices are an important component of edge computing because analysis of data takes place within these connected devices which are far from a data centre but are able to process data on the edge. Micro-data centres are at the centre of edge computing needs. Edge computing enables data-stream acceleration, including real-time data processing without latency. It allows smart applications and devices to respond to data almost instantaneously, as its being created, eliminating lag time. This is critical for technologies such as self-driving cars, and has equally important benefits for business. Edge computing allows for efficient data processing in that large amounts of data can be processed near the source, reducing Internet bandwidth usage. This both eliminates costs and ensures that applications can be used effectively in remote locations.

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DIGITAL TWIN

Digital twin is a real mapping of all components in the product life cycle using physical data, virtual data and interaction data between them. Digital twins could be used in manufacturing, energy, transportation and construction. Large, complex items such as aircraft engines, trains, offshore platforms and turbines could be designed and tested digitally before being physically produced. These digital twins could also be used to help with maintenance operations. For example, technicians could use a digital twin to test that a proposed fix for a piece of equipment works before applying the fix the physical twin. Digital twin model designed to solve physical issues faster by detecting them sooner, predict outcomes to a much degree of accuracy. Its ability to evaluate performance of the equipment in real-time, may help companies realise value and benefits iteratively and faster than ever before. With the explosion of IoT sensors, digital-twin scenarios can include smaller and less complex objects, giving additional benefits to companies.

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NATURAL LANGUAGE PROCESSING

Natural language processing

(NLP) is a branch of artificial intelligence that helps computers understand, interpret and manipulate human language. NLP draws from many disciplines, including computer science and computational linguistics, in its pursuit to fill the gap between human communication and computer understanding.

Natural language processing helps computers communicate with humans in their own language and scales other language-related tasks. For example, NLP makes it possible for computers to read text, hear speech, interpret it, measure sentiment and determine which parts are important. NLP is important because it helps resolve ambiguity in language and adds useful numeric structure.

to the data for many downstream applications, such as speech recognition or text analytics.

Natural language processing includes many different techniques for interpreting human language, ranging from statistical and machine learning methods to rules-based and algorithmic approaches. We need a broad array of approaches because the text- and voice-base data varies widely, as do the practical applications. Basic NLP tasks include tokenization and parsing, lemmatization/stemming, part-of-speech tagging, language detection and identification of semantic relationships. In general terms, NLP tasks break down language into shorter, elemental pieces, try to understand relationships between the pieces and explore how the pieces work together to create meaning.

I. PRABHAKAR (CSE-B 2/4)