BYTE QUEST

Vasavi College of Engineering

Department of Computer Science and Engineering

July 15, 2018
Volume 55

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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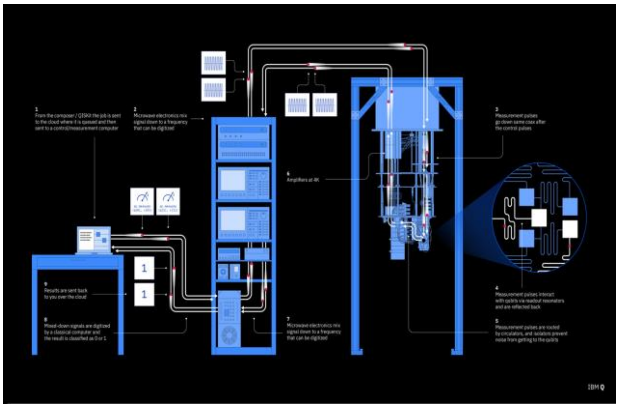
QUANTUM COMPUTER

A quantum computer is any device for computation that makes direct use of distinctively quantum mechanical phenomena, such as superposition and entanglement, to perform operations on data. In a classical (or conventional) computer, information is stored as bits; in a quantum computer, it is stored as qubits (quantum bits). The basic principle of quantum computation is that the quantum properties can be used to represent and structure data, and that quantum mechanisms can be devised and built to perform operations with this data. Although quantum computing is still in its infancy, experiments have been carried out in which quantum computational operations were executed on a very small number of qubits.



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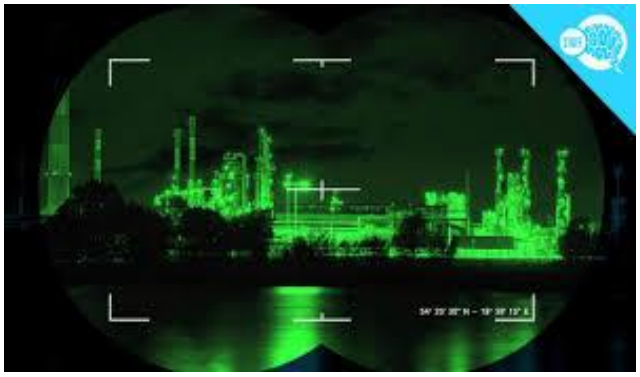
NIGHT VISION TECHNOLOGY



Night Vision Technology, as the name suggests, is the expertise that makes us capable to see in the night without using any external light source such as a torch or a lamp. Highly advanced light sensitive cameras are used in this technology that produce clear visible images at night which the naked eye can't do.

Now, photocathode is an intensifier that gives more brightness to every component of the light rays captured. Following the photocathode is the closely placed Micro Channel Plate (MCP). MCP detects electrons at various frequencies of light and constructs a charge pulse for every photon that strikes it. Hence, use of an MCP makes detection of the weakest component of light possible that further proves to be a boon for light amplification.

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MACHINE LEARNING

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves. The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better decisions in the future based on the examples that we provide. The primary aim is to allow the computers learn automatically without human intervention or assistance and adjust actions accordingly. Machine learning algorithms are often categorized as supervised or unsupervised.

SUPERVISED LEARNING:

Supervised machine learning algorithms can apply what has been learned in the past to new data using labeled examples to predict future events. Starting from the analysis of a known training dataset, the learning algorithm produces an inferred function to make predictions about the output values.

In contrast, unsupervised machine learning algorithms are used when the information used to train is neither classified nor labeled. Unsupervised learning studies how systems can infer a function to describe a hidden structure from unlabeled data. Semi-supervised machine learning algorithms fall somewhere in between supervised and unsupervised learning, since they use both labeled and unlabeled data for training – typically a small amount of labeled data and a large amount of unlabeled data. Reinforcement machine learning algorithms is a learning method that interacts with its environment by producing actions and discovers errors or rewards.

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