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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SRI VENKATESWARA COLLEGE OF ENGINEERING , TIRUPATI

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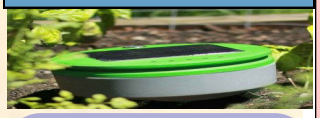

Inside This Issue

VIRTUAL & AUGMENTED REALITY

Virtual reality (VR) and augmented reality (AR) hold great promise for the future of gaming, marketing, e-commerce, education, and a variety of other industries. Both technologies are known for providing an upgraded experience that combines a virtual and real world with enhanced 3-D images. Although the two can be easily confused, there are some fundamental differences between them using a spinning string trimmer. On-

The Key Concepts of VR & AR:

VIRTUAL REALITY

A computer-generated representation of another universe or reality is known as virtual reality (VR). It's commonly seen in 3D movies, virtualtours, and video games. It aids in the creation of realistic simulations and

the "immersion" of the spectator through the use of computers and sensory instruments such as headsets and gloves. Virtual reality is utilized for training, education, and science in addition to gaming and enjoyment. Virtual reality is the full name of the technology.

AUGMENTED REALITY

Augmented Reality (AR) is a technology that combines the digital and physical worlds to create a virtual experience

How does virtual reality work?

Apps for mobile or desktop that use augmented reality technology to combine digital elements into the real environment. Augment Reality is the full name of the technology.

For instance, AR technology can be used to overlay score overlays on televised sports games and to pop out 3D photographs, texts, and

How does augmented reality work?

AR employs computer vision, mapping, and depth tracking. This feature allows cameras to collect, send, and process data in order to display digital material that is relevant to whatever the viewer is

GUNDRATHI LOKESH

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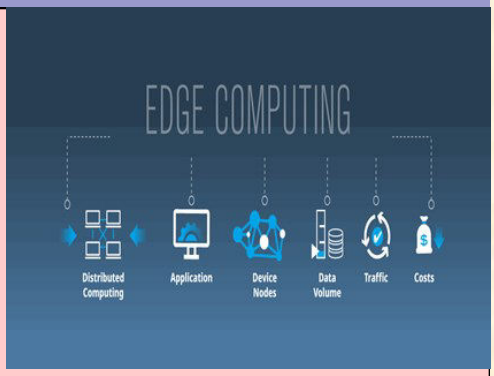
EDGE COMPUTING



Edge computing is a distributed IT architecture which moves computing resources from clouds and data centers as close as possible to the originating source. The main goal of edge computing is to reduce latency requirements while processing data and saving network costs. The edge can be the router, ISP, routing switches, integrated access devices (IADs), multiplexers, etc. The most significant thing about this network edge is that it should be geographically close to the device.

How Does Edge Computing Work

In a traditional setting, data is produced on a user's computer or any other client application. It is then moved to the server through channels like the internet, intranet, LAN, etc., where the data is stored and worked upon. This remains a classic and proven approach to client-server computing

Benefits of Edge Computing

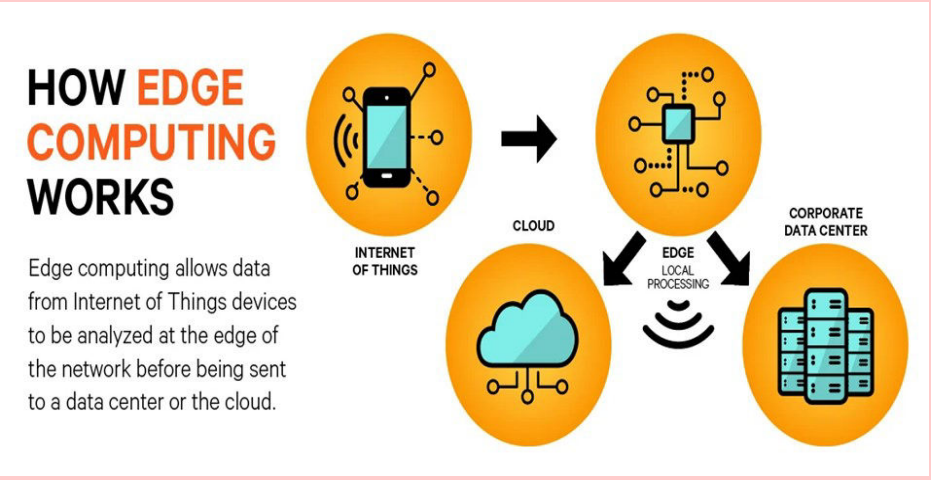
While AI algorithms can streamline the complex process of managing inventory databases, the task of picking a product from a warehouse shelf still involves manual labor. AR technology helps eliminate confusion and make this process quick and precise. A warehouse worker holding an iPad or wearing Microsoft HoloLens (or any other headset, for that matter) gets instructions about the exact location of a particular item and is guided to the very aisle and shelf where it is stored. No more guesswork and getting lost amidst the similarly looking shelves – anyone who has ever been inside an industrial warehouse can understand the value of this solution.

Preventing accidents and disruptions

VR is helping predict, and thus potentially evade the hazards and disruption risks associated with the use of an assembly line. By simulating production environment, manufacturing companies can indicate potential threats and eliminate them long before they even arise. The value of this solution is difficult to overlook, since it helps reduce downtime as well as repair and maintenance expenses, and enhances employee security.

One of the best ways to implement edge computing is in smart home devices. In smart homes, a number of IoT devices collect data from around the house. The data is then sent to a remote server where it is stored and processed. This architecture can cause a number of problems in the event of a network outage. Edge computing can bring the data storage and processing centers close to the smart home and reduce backhaul costs and latency.

As devices grew smaller over the years, their computing and processing powers have grown exponentially. While data warehouses and server farms were once considered to be the ultimate choice for computing speed, the focus has quickly shifted to the concept of cloud or "offsite storage". Companies like Netflix, Spotify and other SaaS



M. DEEPTHI (20BF1A0598)

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. I 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 addressable.

Home automation:

IoT devices are a part of the larger concept of home automation, which can include lighting, heating and air conditioning, media and security systems and camera systems. Long-term benefits could include energy savings by automatically ensuring lights and electronics are turned off or by

making the residents in the home aware of usage. A smart home or automated home could be based on a platform or hubs that control smart devices and appliances. For instance, using Apple's Home Kit, manufacturers can have their home products and accessories controlled by an application,

Elder care:

One key application of a smart home is to provide assistance to elderly individuals and to those with disabilities. These home systems use assistive technology to accommodate an owner's specific disabilities. Voice control can assist users with sight and mobility limitations while alert systems can be connected directly to cochlear implants worn by hearing-impaired users. They can also be equipped with additional safety features, including sensors that monitor for medical emergencies such as falls or seizures. Smart home technology applied in this way can provide users with more freedom and a higher quality of life. The term It can assist in the smarter control of homes and cities via mobile phones. It enhances security and offers personal protection.

By automating activities, it saves us a lot of time. Information is easily accessible, even if we are far away from our actual location, and it is updated frequently in

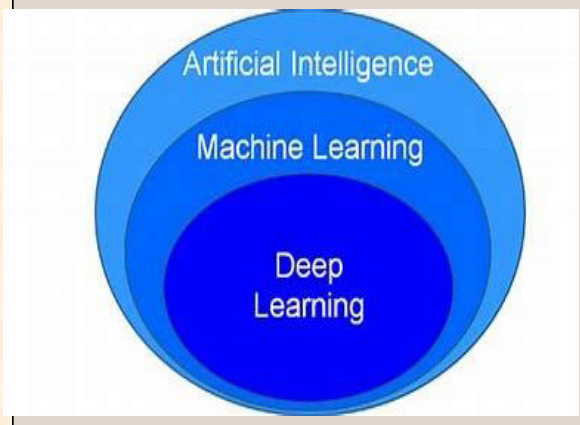
real time. Electric Devices are directly connected and communicate with a controller computer, such as a cell phone, resulting in efficient electricity use. As a result, there will be no unnecessary use of electricity equipment.

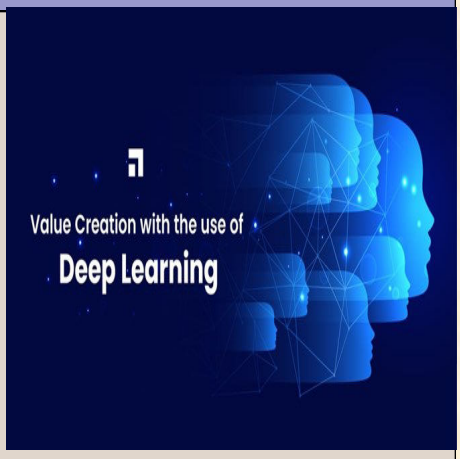
Personal assistance can be provided by IoT apps, which can alert you to your regular plans.

It is useful for safety because it senses any potential danger and warns users. For example, GM OnStar, is a integrated device that system which identifies a car crash or accident on road. It immediately makes a call if an accident or crash is found. It minimizes human effort because IoT devices connect and communicate with one another and perform a variety of tasks without the need for human intervention. Patient care can be performed more effectively in real time without the need for a doctor's visit. It gives them the ability to make choices as well as provide evidence-based care. Asset tracking, traffic or transportation

KOLE VAMSI (21BF1A0590)

DEEP LEARNING





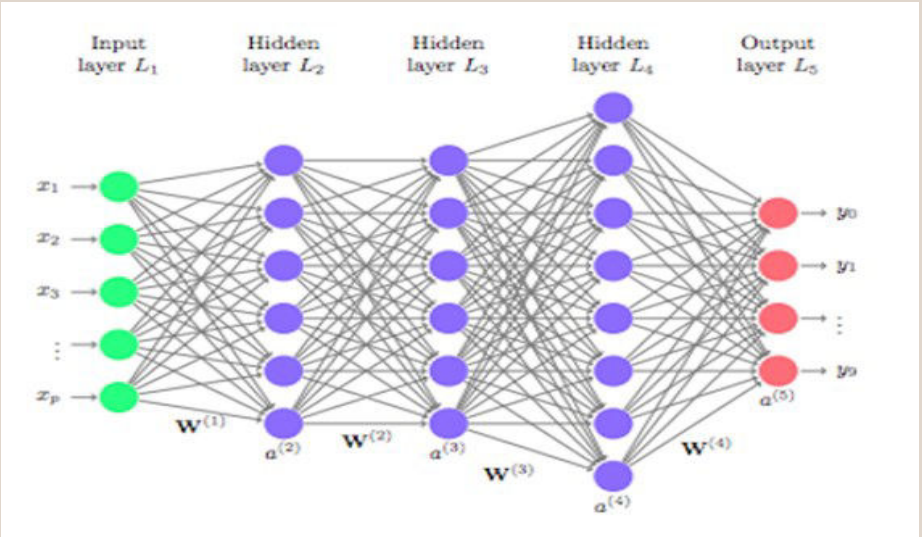
Deep learning (also known as deep structured learning) is part of a broader family of machine learning methods based on artificial neural networks with representation learning. Learning can be supervised, semi-supervised or unsupervised.

Deep-learning architectures such as deep neural networks, deep belief networks, deep reinforcement learning, recurrent neural networks, convolutional neural networks and Transformers have been applied to fields including computer vision, speech recognition, natural language processing, machine translation, bioinformatics, drug design, medical image analysis, climate science, material inspection and board game programs, where they have produced results comparable to and in some cases surpassing human expert performance. have produced results comparable to and in some cases surpassing human expert performance

WHAT IS DEEP LEARNING:

Deep learning is a class of machine learning algorithms that: 199–200N uses multiple layers to progressively extract higher-level features from the raw input. For example, in image processing, lower layers may identify edges, while higher layers may identify the concepts relevant to a human such as digits or letters, or faces.

deep learning, each level learns to transform its input data into a slightly more abstract and composite Representation. In an image recognition application, the raw input may be a matrix of pixels; the first representational layer may abstract the pixels and encode edges; the second layer may compose and encode arrangements of edges; the third layer may encode a nose and eyes; and the fourth layer may recognize that the image contains a face. Importantly, a deep



G. NAGARAJA SAI PRIYA
(21BF1A0565)

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ABOUT DEPARTMENT

Vision of the Department

To produce globally competent, dynamic and multi talented young leaders with skill & knowledge in Computer science and Engineering to cater the contemporary demands of the software industry, thereby making them industry ready while at the Institution and also to pursue higher education imbibing holistic approach.

Mission of the Department

M1: To impart high quality technical education in Computer Science and Engineering by providing well equipped infrastructure, core values.

M2: Advanced research and technical consultancy services with qualified and senior faculty.

M3: To prepare the learners professionally deft and intellectually adept possessing excellent skill, knowledge and behavior.

M4: To inculcate the leadership capabilities in learners to face the dynamic and challenging global of the Computer Science and Engineering field.

Programme Outcomes (POs)

PO1 : Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: 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.

PO3: 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.

PO4: 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.

PO5: 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.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities rele-

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Programme Outcomes (POs)

PO7: 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

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

Programme Specific Outcomes (PSOs)

PSO1 : Problem Solving Skills: Ability to design and develop computing tools with moderate complexity in the areas pertaining to database, data analytics, networking, web and app design, IoT and information security with integration.

PSO2: Professional Skills: Ability to apply standard practices and methods in software project management and software development using suitable programming environments to deliver quality product to the industry

Programme Educational Objectives (PEOs)

PEO1: To impart foundations of applied science and engineering subjects in order to apply, analyze and solve problems in computational aspects.

PEO2: To inculcate ability in creativity and design of computer support systems and impart knowledge and skills to analyze, design, test and implement various software applications.

PEO3: To strengthen higher education, research, prepare for globally acclaimed competitions; imbibe in civic-leadership qualities and to trigger social, ethical, holistic and behavioral approach