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COURSE CODE :COM 423

COURSE TITLE:EXPERT SYSTEM AND MACHINE LEARNING

LEVEL :HND2

ASSIGNMENT ON COM 422

The three(3) AI area are;(Neural networks, Navigation,and Virtual Reality).

1:NEURAL NETWORK.

A neural network is a type of artificial intelligence modeled after the human brain, consisting of interconnected nodes (neurons) that process and transmit information. These networks are used for tasks such as image recognition, natural language processing, and predictive analytics

Application are;

▪   ÷ Is a technological discipline that trains computers to interpret and understand the visual world. It involves algorithms and models designed to identify and categorize images, based on patterns and

objects within them.examples , Identifying objects, faces, or scenes in images.Google Photos uses neural networks for facial recognition, object detection, and scene understanding in images.

Website: photos.google.com.

- **Natural Language Processing (NLP**) ÷ Is a machine learning technology that gives computers the ability to interpret, manipulate, and comprehend human language. Example, language translation, sentiment analysis, chatbots.

Website: openai.com

Website: Google Translate.com

- ÷ are to analyze past, current, and future fiscal data and conditions to shape strategic decisions and policy. JPMorgan's LOXM JPMorgan uses neural networks in their LOXM (Liquid Oxen) system for stock trading and market predictions.

Website: jpmorgan.com

- ÷ use technology to partially or entirely replace the human driver in navigating a vehicle from an origin to a destination while avoiding road hazards and responding to traffic conditions.Enabling self-driving cars to understand and navigate the environment. Tesla's

Autopilot system uses neural networks for object detection, lane keeping, and navigation in self-driving cars.

Website: tesla.com/autopilot.

- ÷ Assisting in diagnosing diseases from medical images and data. IBM Watson Health employs neural networks to analyze medical images and assist in disease diagnosis.

Website: ibm.com/watson-health.

2 NAVIGATION

Navigation refers to the process of determining and maintaining a course or path to a destination.

Application are

- **Robotic Vacuum Cleaners** ÷ iRobot iRobot's Roomba vacuum cleaners use navigation algorithms to map and clean homes efficiently, avoiding obstacles and returning to charging stations.

  Website: irobot.com

- ÷ is a social fitness network that uses GPS

data to track running and cycling activities. It provides detailed maps of routes, performance analytics, and social features to connect with other athletes and share achievements.

Website: Strava

- ÷ Advanced navigation systems for ships ensure safe and efficient marine travel.

Website: Raymarine.com

- ÷ Aircraft navigation systems provide pilots with critical flight information, ensuring safe and efficient air travel.

Website: Honeywell Aerospace.com

- ÷Agriculture robots perform crop maintenance tasks such as harvesting, applying pesticides, weeding, and other tasks .example Blue River Technology develops autonomous agricultural robots that navigate fields to perform tasks like precision weeding and crop spraying.

Website: bluerivertechnology.com

3 VIRTUAL REALITY

Virtual Reality is a simulated experience that can be similar to or completely different from the real world, often involving immersive environments created with computer technology.

Applications are

- ral or artificial—man-made—improvements that are attached or have been added.Virtual reality enables potential buyers to take virtual tours of properties without physically visiting them.

Website: Matterport.com

- ÷ Allows students to experience destinations from across the world without ever having to leave the classroom.Virtual Reality provides immersive educational experiences, enabling students to explore historical sites, conduct virtual lab experiments, and visualize complex concepts in a 3D environment, enhancing their learning and retention.it is also used for training in various fields, including medical surgery

simulations, military exercises, and flight simulations.

Website: zSpace.com

- ÷ is a form of communication that enables people in different physical locations to use their mobile or internet connected devices to meet in the same virtual room.Virtual Reality, facilitates virtual meetings and collaboration, providing a sense of presence and interaction for remote teams.

Website: Spatial.com

- ÷ VR gaming offers players immersive experiences by placing them directly inside the game world. This heightened sense of presence enhances gameplay, making it more engaging and interactive.

Website: Oculus.com

- ÷ is used to train surgeons and medical professionals by simulating complex surgeries and procedures in a risk-free environment. It allows for practice and improvement of skills without the need for live patients.

Website: Osso VR.com