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**University of Human Development**

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**deep learning**

**Members:**

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**Abstract**

Deep learning is a branch of artificial intelligence that utilizes neural networks to create systems that can learn and make decisions. It is a subset of machine learning, which is a broader field that uses algorithms to make decisions and predictions based on data. Deep learning is used in a variety of applications, from facial recognition to natural language processing.  
  
Deep learning models are composed of layers of neurons, which are connected to each other and to the input and output of the system. Each neuron is responsible for processing a small portion of the data, and the layers of neurons collectively process the data to make decisions. The layers of neurons are also known as artificial neural networks.  
  
The main advantage of deep learning is its ability to learn from data without relying on predetermined rules or algorithms. This allows the system to learn complex patterns and make decisions based on data that would be difficult or impossible to program manually. Additionally, deep learning models can be trained quickly and accurately on large datasets.  
  
Deep learning is used in a wide range of applications, from computer vision and natural language processing to healthcare and finance. In computer vision, deep learning is used for object recognition, image segmentation, and image classification. In natural language processing, deep learning is used for sentiment analysis, text summarization, and language translation. In healthcare, deep learning is used for medical imaging, medical diagnosis, and medical decision support. In finance, deep learning is used for risk management, fraud detection, and trading.  
  
Abstract:  
  
Deep learning is a branch of artificial intelligence that uses neural networks to create systems that can learn and make decisions. It is a subset of machine learning, which is a broader field that uses algorithms to make decisions and predictions based on data. Deep learning models are composed of layers of neurons, which are connected to each other and to the input and output of the system. The main advantage of deep learning is its ability to learn from data without relying on predetermined rules or algorithms. Deep learning is used in a wide range of applications, from computer vision and natural language processing to healthcare and finance.

**Introduction**

Introduction  
Deep learning is a branch of artificial intelligence that uses algorithms to learn from data in order to make decisions, predictions, or classifications. It is a subset of machine learning, which is a broader field of study that focuses on the development of algorithms that can learn from data without being explicitly programmed. Deep learning is a powerful tool for solving complex problems and is becoming increasingly popular for its ability to produce accurate results with minimal human intervention. Deep learning has been used to improve the accuracy of facial recognition, natural language processing, and autonomous vehicles, and is expected to continue to revolutionize many industries.  
  
Deep learning is based on the idea of artificial neural networks, which are computer programs modeled after the human brain. These networks are composed of many layers of interconnected nodes, which are able to learn from data by adjusting their weights and biases. This learning process is known as training and is done by feeding the network large amounts of data and allowing it to make predictions. Over time, the network is able to improve its accuracy by adjusting its weights and biases in response to new data.  
  
Deep learning algorithms are typically divided into two categories: supervised and unsupervised. Supervised learning algorithms are used when there is a known set of input and output data, while unsupervised learning algorithms are used when there is no known set of input and output data. Deep learning algorithms can be applied to a variety of tasks, such as image recognition, natural language processing, and autonomous driving.  
  
Deep learning is also used in a variety of fields, such as healthcare, finance, and robotics. In healthcare, deep learning is used to detect and diagnose diseases, such as cancer and heart disease. In finance, deep learning is used to detect fraud and analyze financial markets. In robotics, deep learning is used to enable robots to recognize objects and navigate their environment.  
  
Deep learning has the potential to revolutionize many industries, and its applications are only limited by the imagination. With its ability to process large amounts of data quickly and accurately, deep learning is poised to become an essential tool for many businesses and organizations.

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