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1. What is DL ?

Ans. DL stands for Deep Learning that in simple terms in the heart of which aims to mimic a human. Deep learning is a subset of machine learning that uses artificial neural networks with multiple layers to model and understand complex patterns in data. It allows computers to automatically learn features from large amounts of data without needing explicit programming for every task. Deep learning is widely used in areas like image recognition, natural language processing, and speech recognition.

1. What is Neural Network ? Explain its types.

Ans. A neural network is a computational model inspired by the structure of the human brain. It consists of interconnected layers of nodes (called neurons) where each node processes input and passes the output to the next layer. The basic types of neural networks include:

* Artificial Neural Network (ANN): Type of computing system inspired by the way the human brain works. It consists of layers of interconnected nodes called neurons, which process information by assigning weights to inputs and passing the results through an activation function.
* Recurrent Neural Network (RNN): Designed for sequential data, it has loops that allow information to persist, making it useful for tasks like language modeling.
* Convolutional Neural Network (CNN): Specialized for processing structured grid data like images by applying filters to detect patterns.

1. What is CNN in simple words ?

Ans. A Convolutional Neural Network (CNN) is a type of deep learning model that is particularly effective for analyzing visual data such as images and videos. It uses layers that perform convolution operations to automatically detect features such as edges, textures, and shapes in the data. CNNs reduce the need for manual feature extraction and are commonly used in image classification, object detection, and facial recognition tasks.

1. Create short notes about the pipeline.

Ans. The project pipeline is a streamlined workflow of the process of the project from the beginning till the end . It consists of the following steps :

* Data collection and data loading – collection of data happens from web sources like Kaggle.com which consists of datasets containing the data(images) to help train the model. The images are cleaned and processed and are used to train the model and after training , the model is evaluated and then validated finally
* Image processing and augmentation – this is the second step and its necessary because the dataset consists of a variety of images of different resolutions and dimensions and CNN needs all the images in the same dimension. Image augmentation is where the model is trained to recognize images even if they are flipped, turned around, zoomed in or out.
* Build CNN – use available python libraries like TensorFlow to build the model
* Test and evaluate – Evaluate the working of the model and give the appropriate feedback.