Role: NLP Engineer

Company : Tredence

- **Qus-1:-** **What is backpropagation, and how does it work in deep learning?**

- **Ans:-** • Backpropagation is an algorithm used to train artificial neural networks. It works by computing the gradient of the loss function with respect to the weights of the network, and then updating the weights using gradient descent. The algorithm iteratively adjusts the weights until the loss function is minimized.

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- **Qus-2:-** **Differentiate between a Feedforward Neural Network and Recurrent Neural Network?**

- **Ans:-**

Feedforward Neural Network (FNN):

- A feedforward neural network is a type of artificial neural network that flows in only one direction, from the input layer to the output layer, without looping back. The input is passed through multiple hidden layers and is transformed into an output by applying activation functions to the weighted sum of inputs.

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- **Ans:-**

Recurrent Neural Network (RNN):

- A recurrent neural network is a type of artificial neural network that is designed to process sequential data, where the output of a layer is fed back into the network as input for the subsequent layer. This allows the network to keep track of the context of the input over time and make predictions based on sequences of inputs.

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- **Qus-3:- What is word embedding, and how is it used in NLP?**

- **Ans:-** • Word embedding is a technique used in NLP to represent words as dense vectors in a high-dimensional space. This allows words with similar meanings to be represented by similar vectors, making it easier for NLP models to capture semantic relationships between words. Word embeddings are typically learned from large amounts of text using algorithms such as Word2Vec, GloVe, or BERT.

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- **Qus-4:- How do you handle ambiguity in NLP?**

- **Ans:-** • Ambiguity is a common problem in NLP, where a word or phrase can have multiple meanings depending on the context. To handle ambiguity, NLP models can use techniques such as syntactic parsing, semantic role labeling, or context-aware word embeddings. These techniques can help the model to disambiguate the meaning of a word based on its surrounding context.

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- **Qus-5:- How do you handle out-of-vocabulary (OOV) words in NLP?**

- **Ans:-**• OOV words are words that are not present in the vocabulary of a NLP model. They can occur when the model encounters words that are not seen during training, such as rare or misspelled words. There are several techniques for handling OOV words, including replacing them with a special token, using character-level embeddings, or incorporating external knowledge sources such as a spell checker or a lexicon.

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