1. What are Vanilla autoencoders

The vanilla autoencoder, as proposed by Hinton, consists of only one hidden layer. The number of neurons in the hidden layer is less than the number of neurons in the input (or output) layer

2. What are Sparse autoencoders

A sparse autoencoder is one of a range of types of autoencoder artificial neural networks that work on the principle of unsupervised machine learning. Autoencoders are a type of deep network that can be used for dimensionality reduction – and to reconstruct a model through backpropagation

3. What are Denoising autoencoders

A Denoising Autoencoder is a modification on the autoencoder to prevent the network learning the identity function. Specifically, if the autoencoder is too big, then it can just learn the data, so the output equals the input, and does not perform any useful representation learning or dimensionality reduction.

4. What are Convolutional autoencoders

Convolutional autoencoders (CAEs) are unsupervised dimensionality reduction models composed by convolutional layers capable of creating compressed image representations

5. What are Stacked autoencoders

A single Autoencoder might be unable to reduce the dimensionality of the input features. Therefore for such use cases, we use stacked autoencoders. The stacked autoencoders are, as the name suggests, multiple encoders stacked on top of one another.

6. Explain how to generate sentences using LSTM autoencoders

An LSTM Autoencoder is an implementation of an autoencoder for sequence data using an Encoder-Decoder LSTM architecture.

Once fit, the encoder part of the model can be used to encode or compress sequence data that in turn may be used in data visualizations or as a feature vector input to a supervised learning model.

7. Explain Extractive summarization

There are two types of summarization: extractive and abstractive. Extractive summarization selects a subset of sentences from the text to form a summary; abstractive summarization reorganizes the language in the text and adds novel words/phrases into the summary if necessary.

8. Explain Abstractive summarization

Abstractive Text Summarization is the task of generating a short and concise summary that captures the salient ideas of the source text. The generated summaries potentially contain new phrases and sentences that may not appear in the source text.

9. Explain Beam search

Beam search is a heuristic search algorithm that explores a graph by expanding the most optimistic node in a limited set. Beam search is an optimization of best-first search that reduces its memory requirements.

10. Explain Length normalization

Document length normalization adjusts the term frequency or the relevance score in order to normalize the effect of document length on the document ranking.

11. Explain Coverage normalization

Normalization procedure focuses on characteristics of specific entities and represents the micro view of entities within the ERD.

12. Explain ROUGE metric evaluation

ROUGE stands for Recall-Oriented Understudy for Gisting Evaluation. It is essentially a set of metrics for evaluating automatic summarization of texts as well as machine translations. If we consider just the individual words, the number of overlapping words between the system summary and reference summary is 6.