1. What is deep learning?

* Deep learning is a subset of artificial intelligence. Deep learning is a made up of system of layers called neural networks that attempt to simulate and mimic the behavior of human mind and how it works, this system allows it to learn from vast amounts of data.

1. How is it different from machine learning?

* Machine Learning is a subset of Artificial Intelligence, and Deep learning is a subset of Machine Learning and makes up most of its backbone. They are able to analyze big data, such as audio, video, images and other unstructured data in ways that Machine Leaning cannot.

1. What is an artificial neural network?

* A neural network also known as Artificial Neural Networks (ANN) mimics the way neurons in the human brain works. They consist of an input later, one or more hidden layers (which is used to learn patterns in data) and an output. The first layer of nodes gets given a numerical value (between the values of 0 and 1) identified as X (known as its weight), if the value is above the activation threshold that node is triggered to send its data to the next node that it is connected to.

1. How does forward propagation work in a neural network?

* Information is passed through an ANN in a forward direction, to be processed based off of activation functions in the hidden layers and generate an output. With this output the ANN will then make a prediction to see how well it done, with this information it will then carry out a backward propagation.

1. What is backpropagation and how does it work?

* Backward propagation is a process of predicting the accuracy of the trained data. The process works from moving from the output layer to the input later of the ANN.

1. How does a deep learning model make predictions?

* Deep learning models are used to make predictions based of patterns in the data that its given. The data gets trained over many epochs to finetune the models prediction accuracy. The accuracy of the model depends on many factors such as the weights and bias of each node, how many hidden layers there are, the type of data being trained and the epochs.

Once the data has been trained, it can be used to make predictions on data that it has not seen before.

1. What is the role of epochs in deep learning?

* Epochs is one complete cycle of forward and backward propagation where each cycle the model learns to recognize patterns in the training data and adjusts its weights and biases accordingly. Increasing the epoch value allows for the model to make more accurate predictions on new data (it’s important to know that it is possible to overtrain a model so be cautious).

1. Can deep learning handle unstructured data?
2. What is the difference between the input and output layers in a neural network?
3. What is the process for training a deep learning model?
4. How does deep learning eliminate some of the data pre-processing involved in machine learning?
5. Can deep learning automate feature extraction?
6. How does deep learning determine important features for categorization?
7. How does deep learning compare to manual feature extraction in machine learning?
8. Can deep learning be used for a wide range of applications?
9. What are some real-world examples of deep learning being used?
10. How does deep learning improve over time?
11. Is deep learning more accurate than traditional machine learning algorithms?
12. What are some limitations of deep learning?
13. What is the future of deep learning?