**What are 4 types of phishing?**

* Spear Phishing.
* Whaling.
* Vishing.
* Email Phishing

**What is phishing?**

Phishing is a type of cybersecurity attack during which malicious actors send messages pretending to be a trusted person or entity.

**What Are the Different Types of Machine Learning?**

There are three types of machine learning:

* Supervised (labelled data) we used this one in thesis
* Unsupervised (unlabeled data)
* Reinforcement (learn from previous action)

**What is ‘training Set’ and ‘test Set’ in a Machine Learning Model? How Much Data Will You Allocate for Your Training, Validation, and Test Sets?**

There is a three-step process followed to create a model:

* Train the model
* Test the model
* Deploy the model

1. Train set:The training set is examples given to the model to analyze and learn used 80% of data
2. Test set: The test set is used to test the accuracy of the hypothesis generated by the model. 20% of the data

**Explain the Confusion Matrix with Respect to Machine Learning Algorithms**

It is a specific table used to measure an algorithm's performance. It is mostly used in supervised learning; in unsupervised learning, it’s called the matching matrix.

The confusion matrix has two parameters:

* Actual
* Predicted

**What Is a False Positive and False Negative and How Are They Significant?**

* False positives are those cases that wrongly get classified as True but are False.
* False negatives are those cases that wrongly get classified as False but are True.

**Differences Between Machine Learning and Deep Learning?**

* ML: Enables machines to take decisions on their own, based on past data
* DL : Enables machines to take decisions with the help of artificial neural networks

**What is a Random Forest?**

A ‘random forest’ is a supervised machine learning algorithm that is generally used for classification problems.

**Define Precision and Recall.**

**Precision**

Precision is the ratio of several events you can correctly recall to the total number of events you recall (mix of correct and wrong recalls).

**Recall**

A recall is the ratio of the number of events you can recall the number of total events.

**What Are the Softmax and ReLU Functions?**

Softmax is an activation function that generates the output between zero and one. It divides each output, such that the total sum of the outputs is equal to one. Softmax is often used for output layers.

ReLU (or Rectified Linear Unit) is the most widely used activation function. It gives an output of X if X is positive and zeros otherwise. ReLU is often used for hidden layers.

**What Is Dropout and Batch Normalization?**

Dropout is a technique of dropping out hidden and visible units of a network randomly to prevent overfitting of data (typically dropping 20 percent of the nodes). It doubles the number of iterations needed to converge the network.

Batch normalization is the technique to improve the performance and stability of neural networks by normalizing the inputs in every layer so that they have mean output activation of zero and standard deviation of one

**What Is the Difference Between Epoch, Batch, and Iteration in Deep Learning?**

* Epoch - Represents one iteration over the entire dataset (everything put into the training model).
* Batch - Refers to when we cannot pass the entire dataset into the neural network at once, so we divide the dataset into several batches.
* Iteration - if we have 10,000 images as data and a batch size of 200. then an epoch should run 50 iterations (10,000 divided by 50)

**Explain the Adam optimization algorithm.**

Adam optimization is an extension to the stochastic gradient descent. This algorithm is useful when working with complex problems involving vast amounts of data or parameters. It needs less memory and is efficient.