**AssalamuAlaykum. I am Nafe Muhtasim. Firstly, I would like to Thank our supervisor Prof Dr. Umme Hani mam for every guideline she has provide us all the way of our thesis and also welcome honorable guests.**

**Slide 1**

Here in this part, we have compared different Algorithms of Machine Learning. Two approaches that have been followed here. One is the algorithm performance against the processed Datasets and the other one is feature extraction method of transfer learning. So firstly, let me describe why using machine learning algorithms in the health care system in the first place

* Machine learning algorithms can detect patterns associated with diseases and health conditions by studying thousands of healthcare records and other patient data.
* Machine learning has demonstrated its value in helping clinical professionals improve their productivity and precision.
* The deep-learning algorithms of machine learning can trim the time it takes to review patient and medical data, which leads to faster diagnosis and speedier patient recovery.

That is why machine learning is very vital in health care system.

**Slide 2**

Now let me introduce list of machine learning algorithms that have been used. Here we have used SVM (Support vector machine), Decision Tree, K-NN (K-Neighbors), Naïve Bayes, Logistic Regression, Random Forest classifier.

And for transfer learning feature extraction method, we have used VGG16 feature extraction.

**Slide 3**

After running all those algorithms, we got the accuracy score between the processed Datasets and the feature extraction method in order to evaluate our model. Here is the accuracy score table and the Bar plot related to the table.

**Slide 4**

There are others way to evaluate a machine learning model performance as well. Like confusion Matrix, Accuracy score, precision, recall, F1 score, ROC curve. For unbalanced dataset, Precision, Recall and F1 score is used for calculation the classification accuracy. In our case the Malignant and the normal dataset have far more images than the benign dataset. For that our dataset is pretty unbalanced. So, the best way to calculate our classification result is Precision, Recall, F1 score.

**Slide 5**

Here we have showed all the Precision, Recall, F1 score for Benign cases,

Malignant Cases

and also, the normal cases.

So, the next two slide we have showed the F1 score table for the processed Dataset and the feature extraction method. The main reason behind choosing F1 score to compare among them is F1 score is the weighted average of Precision and Recall and it is better measure to use if we need to balance between precession and Recall.

**Slide 6**

So here in case of processed dataset, F1 score table and also a bar plot related to the table have been showed here. Here we can see Support Vector Machine performs well in case of Malignant and Normal Detection.

**Slide 7**

Similarly, this is the table for F1 score and bar plot related to feature extraction method. Here also we can see Support Vector Machine performs the best. And for the overall performance, using the transfer learning feature extraction method gives us the better result when predicting using the machine learning algorithms.

**Slide 8**

After that we have used our model to detect some of the images of the test dataset in order to classify them. So here are some of the classification results.

That’s All from me. Now I would like to welcome my next mate Tahmina Islam for the next steps of our work.