Institute: **Indian Institute Of Technology, Bombay** Date: **December, 2020**

NLP Pannel

Duration : 15 minutes(Over Google Meet)

Panel : Prof. Pushpak Bhattacharyya, Prof. Preethi Jyothi

1. **Machine Learning :** (By Prof. P. Bhattacharyya)
   (a) Confusion matrix, true Positive, true negative, false positive and false negative for Binary classification.
   (b) Precision and Recall
2. **Machine Learning :** (By Prof. P. Jyothi) :
   (a) Regularization, l_2 regularization
   (b) How by probabilistic modelling we reach to l_2 regularized loss?

ML Pannel

Duration : 30 minutes(Over Google Meet)

Panel : Prof. Soumen Chakrabarti, Prof. Ganesh Ramakrishnan, Prof. Abir De

I cant remember the exact questions of this panel as most of the questions were from algorithms and data structure, time and space complexity and one question was from Probability.

Institute: **Indian Institute Of Technology, Bombay** Date: **23rd May, 2021**

ML/NLP/AI Pannel

Duration : 15 minutes(Over Google Meet)

Panel : Prof. Ganesh Ramakrishnan, Prof. Shivaram Kalyanakrishnan

1. (By Prof. G. Ramakrishnan)
   (a) Asked about M.Tech project and current project at iit-kgp in details.
   (b) rank(A),rank(B), rank(A+B), whats the relationship. When they are equal? What happen to rank if we increase columns of the matrix?

Vision Pannel

Duration : 40 minutes(Over Google Meet)

Panel : Prof. Ajit Rajwade, Prof. Suyash Awate, Prof. Parag Chaudhuri

1. (By Prof. Ajit Rajwade)
   (a) Principle Component Analysis. Why not Eigen Vectors of XX^T considered as Principle Components? Relationships between eigen vectors of XX^T and X^TX.
   (b) Describe Gaussian Mixture Model. Given all the parameters how you will generate a sample/data from Gaussian mixture model (Tell the algorithm).
2. (By Prof. Suyash P. Awate)
   (a) K-means clustering in details? What is the loss function? What is the issue with L_2 distance and how to overcome that?
   (b) What is logistic regression? What is the loss function? How to solve the loss function and learn the weights?
   (c) what is gradient descend? What is stochastic gradient descend? What is the issue of gradient descend?
3. (By Prof. Parag Chaudhuri)
   (a) What is convolution operation? If X is box function and W is box function, how they will convolute?
   (b) what is graph laplacian? How GCN works?