Mid Semester Examination

Course Name: Artificial Intelligence   **Code:** CS 571/561

Make reasonable assumptions as and whenever necessary. Carefully read the instructions circulated in the group on September 21, 2021.

Q1. (a). Assignment   **15 points**

Consider the following documents and their associated classes.

D1: *In recent years, researchers, for computer vision, have proposed many deep learning (DL) methods for various tasks, and facial recognition (FR) made an enormous leap using these techniques.*   (Class-***DL***)

D2: *Deep FR systems benefit from the hierarchical architecture of the deep learning methods to learn discriminative face representation.*   (Class-***DL***)

D3: Computer vision methods have been widely used for facial recognition (Class-***CV***)

For the following given test document,

D4: Deep learning based computer vision methods have been used for facial recognition.

Determine the class label of the above test instance for the (i). Multivariate model of naive Bayes classifier and (ii). Multinomial model of naive Bayes classifier.

Documents to submit:

i. Codes with appropriate documentation;

ii. Details of vocabulary words;

iii. Computation of parameters of model (values etc);

iv. Discussion between multivariate vs. multinomial model with respect to this problem (mention why one is chosen over the other; efficiency with respect to computational power etc)

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Best of Luck