MODULE 8 QUIZ 1

dkowsikpai@gmail.com Switch account

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* Required

Email *

fmml20210088@ihub-data.iiit.ac.in

Name *

Kowsik Nandagopan D

FMML ID *

FMML20210088

1. The number of heads observed when tossing a biased coin k times follows which distribution? * 1 point

- [ ] Bernoulli Distribution
- [x] Binomial Distribution
- [ ] Gaussian Distribution
- [ ] Poisson Distribution
- [ ] Uniform Distribution

2. Multivariate gaussian distributions in two variables are just independent gaussians in both variables individually. * 1 point

- ○ This is always true.
- ○ This is always false.
- ◉ This is true only if covariance matrix is purely diagonal
- ○ This is true if all diagonal terms on the covariance matrix are 0
- ○ This is true if the trace of the covariance matrix is 0

3. Let there be a feature F of an object O taking real values between 0 and 1. O can belong to class C1 or C2. If PDF(value of F | O is of type C1) = PDF(value of F | O is of type C2) for all values of F then * 1 point

- ○ F is a very low entropy feature for classification
- ○ F is the most useful feature for classification
- ◉ F cannot be used to perform better than random classification
- ○ No comments can be made about the usefulness of F
- ○ Good classification using F needs neural networks and probabilistic models are insufficient

4. Evaluate the claim using Central Limit Theorem: Number-of-students(marks) in JEE should loosely resemble a normal distribution, given that a large number of students participate. * 1 point

- (●) True, this is a correct application of Cenral Limit Theorem
- ( ) False, this is wrong because the ability of each student is not independent of each other
- ( ) False, this is wrong because the ability of each student is not identically distributed
- ( ) False, such claim required the number of questions to be very large, not the number of students
- ( ) False, the support of the marks is not all real numbers, just 0 to full marks.

5. Generative models are primarily responsible for doing which of the following? * 1 point

- (●) Estimate probability distribution of feature value given class
- ( ) Estimate probability distribution of class given feature
- ( ) Find the single most probable class for each feature
- ( ) Find the single most probable feature value for each class
- ( ) Find the prior probability distribution of feature value

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