Quiz break

Q1-1: Which of the following about Naive Bayes is incorrect?

- A Attributes can be nominal or numeric
- B Attributes are equally important
- C Attributes are statistically dependent of one another given the class value
- D Attributes are statistically independent of one another given the class value
- E All of above

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Quiz break

Q1-2: Consider a classification problem with two binary features, $x_1, x_2 \in \{0,1\}$. Suppose $P(Y = y) = 1/32$, $P(x_1 = 1 | Y = y) = y/46$, $P(x_2 = 1 \mid Y = y) = y/62$. Which class will naive Bayes classifier produce on a test item with $x_1 = 1$ and $x_2 = 0$?

- A 16
- B 26
- C 31
- D 32

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Q1-3: Consider the following dataset showing the result whether a person has passed or failed the exam based on various factors. Suppose the factors are independent to each other. We want to classify a new instance with Confident=Yes, Studied=Yes, and Sick=No.

Confident	Studied	Sick	Result
Yes	No	No	Fail
Yes	No	Yes	Pass
No	Yes	Yes	Fail
No	Yes	No	Pass
Yes	Yes	Yes	Pass

- A Pass
- B Fail

Quiz break

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Quiz Break

Consider the linear perceptron with x as the input. Which function can the linear perceptron compute?

(1) $y = ax + b$

(2) $y = ax^2 + bx + c$

A. (1)

B. (2)

C. (1)(2)

D. None of the above

Quiz Break

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Answer: A. All units in a linear perceptron are linear. Thus, the model can not present non-linear functions.

Quiz Break

Perceptron can be used for representing:

A. AND function
B. OR function
C. XOR function
D. Both AND and OR function

Quiz Break

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Quiz Break

Which one of the following is valid activation function

a)Step function

b) Sigmoid function

C) ReLU function

D) all of above

Quiz Break

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Quiz Break

Let $x = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$. Which of the following functions is NOT an element-wise operation that can be used as an activation function?

A $\mathrm{f}(x) = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$

B $\mathrm{f}(x) = \begin{bmatrix} \max(0, x_1) \\ \max(0, x_2) \end{bmatrix}$

C $\mathrm{f}(x) = \begin{bmatrix} \exp(x_1) \\ \exp(x_2) \end{bmatrix}$

D $\mathrm{f}(x) = \begin{bmatrix} \exp(x_1 + x_2) \\ \exp(x_2) \end{bmatrix}$

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