9:30pm to 10:30pm 14Jan 2023 - Screening

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* Required

Technical

test = [exam for exam in 'entrancesrishti' if exam in 'tons'] Predict output of this python code.

- ['entrance']
- ['srishti']
- ['n','t','n','s','s','t']
- syntax error
- None of these

In clustering which of the following methods is used to know the number of clusters ?

- [ ] None of these
- [ ] Sequencing
- [ ] Thresholding
- [ ] Graph modeling

If A = [[3, 4], [2, 3]], is a square matrix in Python, the determinant of A would be

- ○ None of these
- ○ 0
- ○ 6
- ○ 2

Identify the plot which is a combination of box plot and distribution plot.

- ○ scatter plot
- ○ violin plot
- ○ pair plot
- ○ guitar plot

To which of these can image classification be an example

- ○ unsupervised learning
- ○ supervised learning
- ○ insufficient data in question
- ○ reinforcement learning

Consider we are using Principle Component Analysis to compress face images using top K eigenvectors and attempt reconstruction, subsequently. Here,

- ☐ reconstruction will be bad for non-face images
- ☐ reconstruction will be good for non-face images
- ☐ compression for face images would be lossy
- ☐ compression for face images would be lossless.

What do you think could be represented as vectors

- ☐ an image
- ☐ specifications of an ARM processor
- ☐ words in a poem
- ☐ dna of an organism

What could be a reasonable way to approach missing value problem in a dataset

- [ ] remove samples having missing values in features
- [ ] missing value problems cannot be resolved
- [ ] replace missing value with mean or median
- [ ] remove the feature, if it has too many missing values

In the testing stage, what are the inputs and outputs to the classifier? *

- ○ Input: test samples. Output: Test features
- ○ Input: training features. Output: Predicted labels
- ○ Input: training features, training labels. Output: Learned model
- ○ Input: test features, learned model. Output: Predicted labels

Which is the odd one

- ○ logistic regression
- ○ support vector machine
- ○ decision trees
- ○ linear regression

If A is a square matrix, then

- ○ A + I = A
- ○ A + -A = I
- ○ A + 0 = A
- ○ A = Transpose of A

Which libraries can generate graphics plots.

- ☐ matplotlib
- ☐ seaborn
- ☐ pandas
- ☐ math

A matrix multiplied by a scalar is commonly known as

- ○ complex multiplication
- ○ linear regression
- ○ scalar multiplication
- ○ constant transformation

In a garden there are 4 red flowers, 6 yellow flowers and 5 violent flowers. What is the probability that a flower is plucked at random, is neither red nor yellow.

- 1/3
- 6/14
- 10/15
- 5/14

Assume barking of a dog follows some patterns that could be matched to situations. A machine learning model has been trained to identify the situation based on patterns of the bark. A team of researchers want to modify and apply this technique on different types of crying-patterns of infant human babies to help their caretakers or mothers attend to situations more easily. A good way for this would be to

- this is practically impossible, as datasets on cries of babies aren't available
- strictly follow the same machine learning model - its architecture, algorithms, functions etc
- use or create appropriate datasets and apply appropriate learning techniques
- convince those researchers not to use machine learning techniques on babies

A machine learning problem can be generally written as y=f(x). What does y, f and x stand for?

- y = model, f = data samples, x = labels
- y = data samples, f = model, x = labels
- y=labels, f=model, x=data samples
- y = model, f = labels, x = data samples

If a computer is infected with 'xby' virus, the mouse will stop functioning. The mouse has stopped functioning. Therefore,

- [ ] absence of 'xby' virus can be confirmed
- [ ] presence of 'xby' virus can be confirmed
- [ ] presence of 'xby' virus cannot be confirmed
- [ ] absence of 'xby' virus cannot be confirmed

If (a) 2x + 5y = 2.5 and (b) 4x + 10y = Z, then for what values of Z will (a) and (b) have infinite solutions.

- ○ 1.25
- ○ 2.5
- ○ None of these
- ○ 0

Which of the following is most appropriate

- [ ] to classify cats and dogs, whiskers could be a good feature
- [ ] to classify cats and dogs, shape could be a good feature
- [ ] to classify zebras and tigers, stripes could be a good feature
- [ ] to classify zebras and tigers, food habits could be good feature

If A is a 'c x b' matrix, and if AB and BA are valid, then B is a ___ matrix

- [ ] b x b
- [ ] c x c
- [ ] b x c
- [ ] c x b

The sum of ages of two boys and a girl is 60. How can this be represented in an equation ?

- ○ None of these
- ○ g + bb = 60
- ○ 2b + 1g + 60 = 0
- ○ 2g + b = 60

Matrix equations can be solved using

- [ ] neither row echelon form nor inverse of a matrix
- [ ] inverse of a matrix
- [ ] both row echelon and inverse of matrix
- [ ] row echelon form

Which of these could be disadvantages of principal component analysis (PCA)

- [ ] Fewer misleading data impacting model accuracy.
- [ ] Transformed features are sometimes hard to interpret.
- [ ] Some information is lost, possibly degrading the performance of subsequent training algorithms.
- [ ] Removes redundant features and noise.

What is the statistical median of the following series: 8, 4, 7, 3, 5

- ○ none of these
- ○ 5.4
- ○ 7
- ○ 5

What best describes a gradient descent algorithm

- [ ] its a loss function
- [ ] its an activation function
- [ ] its an optimization algorithm
- [ ] its a hyperparameter tuning function

In the context of supervised machine learning, tick all that apply

- [ ] overfitting is a modeling error, that occurs when a function fits closer to a set of limited training data,
- [ ] perfect fitting of all training samples is the best option.
- [ ] regularization decreases the chances of overfitting,
- [ ] supervised learning is all about overfitting training data,

Which of these cannot be solved using machine learning

- [ ] predicting the next random number of a random-number generator
- [ ] identifying an individual using face detection
- [ ] moving on roads by self-driving cars
- [ ] identifying tumour in brain from scanned images

Which of the following could be sources for data in AI/ML projects *

- ( ) Structured data
- ( ) Unstructured data
- ( ) Insufficient information to provide an answer
- ( ) Semi-structured data

For the task of classification, a good feature should ideally be

- [ ] close to zero for all samples
- [ ] almost same for all samples
- [ ] varying for samples/classes
- [ ] a whole number for all samples

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