

Question 1:

You work for a website that enables customers see all images of themselves on the internet by uploading one self-photo. Your data model uses 5 characteristics to match people to their foto: color, eye, gender, eyeglasses and facial hair. Your customers have been complaining that get tens of thousands of photos without them. What is the problem?

☐ You are overfitting the model to the data

☐ You need a smaller training set

☒ You are underfitting the model to the data (Correct)

☐ You need a larger training set

Question 2:

Your supervisor asks you to create a machine learning system that will help your human resources department classify jobs applicants into well-defined groups. What type of system are you more likely to recommend?

- ☐ an unsupervised machine learning system that clusters together the best candidates.
- ☐ you would not recommend a machine learning system for this type of project.
- ☐ a deep learning artificial neural network that relies on petabytes of employment data.
- ☒ a supervised machine learning system that classifies applicants into existing groups. (Correct)

Question 3:

You and your data science team have 1 TB of example data. What do you typically do with that data?

- ☐ you use it as your training set.
- ☒ You label it big data. (Correct)
- ☐ You split it into a training set and test set.
- ☐ You use it as your test set.

Question 4:

Your data science team is working on a machine learning product that can act as an artificial opponent in video games. The team is using a machine learning algorithm that focuses on rewards: If the machine does some things well, then it improves the quality of the outcome. How would you describe this type of machine learning algorithm?

☐ semi-supervised machine learning

☐ supervised machine learning

☐ unsupervised machine learning

☒ reinforcement learning

(Correct)

Question 5:

The model will be trained with data in one single batch is known as ?

☐ Batch learning

☐ Offline learning

☒ Both A and B

(Correct)

☐ None of the above

Question 6:

Which of the following is NOT supervised learning?

☐ Decision Tree

☐ Linear Regression

☒ PCA (Correct)

☐ Naive Bayesian

Question 7:

Suppose we would like to perform clustering on spatial data such as the geometrical locations of houses. We wish to produce clusters of many different sizes and shapes. Which of the following methods is the most appropriate?

☐ Decision Trees

☐ K-means clustering

☒ Density-based clustering (Correct)

☐ Model-based clustering

Question 8:

The error function most suited for gradient descent using logistic regression is

- ☐ The entropy function.
- ☐ The squared error.
- ☒ The cross-entropy function. (Correct)
- ☐ The number of mistakes.

Question 9:

Compared to the variance of the Maximum Likelihood Estimate (MLE), the variance of the Maximum A Posteriori (MAP) estimate is ____

- ☐ Higher
- ☐ same
- ☒ Lower (Correct)
- ☐ it could be any of the above

Question 10:

___ refers to a model that can neither model the training data nor generalize to new data.

☐ good fitting

☐ overfitting

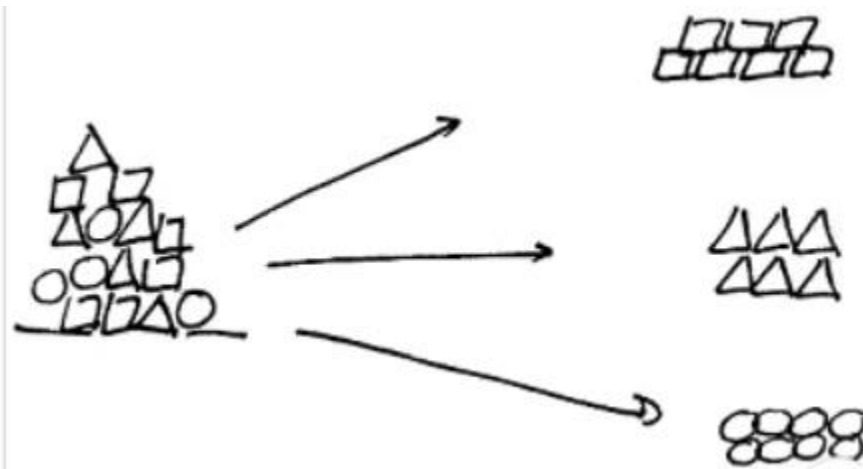
☒ underfitting

(Correct)

☐ all of the above

Question 11:

How would you describe this type of classification challenge?



☒ This is a multiclass classification challenge. (Correct)

☐ This is a multi-binary classification challenge.

☐ This is a binary classification challenge.

☐ This is a reinforcement classification challenge.

Explanation

Shows data being classified into more than two categories or classes. Thus, this is a multi-class classification challenge.

Question 12:

What does it mean to underfit your data model?

☐ There is too little data in your training set.

☐ There is too much data in your training set.

☒ There is not a lot of variance but there is a high bias. (Correct)

☐ Your model has low bias but high variance.

Explanation

Underfitted data models usually have high bias and low variance. Overfitted data models have low bias and high variance.

Question 13:

Asian user complains that your company's facial recognition model does not properly identify their facial expressions. What should you do?

- ☐ Include Asian faces in your test data and retrain your model.
- ☐ Retrain your model with updated hyperparameter values.
- ☐ Retrain your model with smaller batch sizes.
- ☒ Include Asian faces in your training data and retrain your model. (Correct)

Explanation

The answer is self-explanatory: if Asian users are the only group of people making the complaint, then the training data should have more Asian faces.

Question 14:

(Mostly) whenever we see kernel visualizations online (or some other reference) we are actually seeing:

- ☒ What kernels extract (Correct)
- ☐ Feature Maps
- ☐ How kernels Look
- ☐ Q66. The activations for class A, B and C before softmax were 10,8 and 3. The different in softmax values for class A and class B would be :

Question 15:

The activations for class A, B and C before softmax were 10,8 and 3. The different in softmax values for class A and class B would be :

☒ 76% (Correct)

☐ 88%

☐ 12%

☐ 0.0008%

Question 16:

The new dataset you have just scraped seems to exhibit lots of missing values. What action will help you minimizing that problem?

☐ Wise fill-in of controlled random values

☐ Replace missing values with averaging across all samples

☐ Remove defective samples

☒ Imputation (Correct)

Question 17:

Which of the following methods can use either as an unsupervised learning or as a dimensionality reduction technique?

☐ SVM

☒ PCA (Correct)

☐ LDA

☐ TSNE

Question 18:

What is the main motivation for using activation functions in ANN?

☒ Capturing complex non-linear patterns (Correct)

☐ Transforming continuous values into "ON" (1) or "OFF" (0) values

☐ Help avoiding the vanishing/exploding gradient problem

☐ Their ability to activate each neurons individually.

Question 19:

Which loss function would fit best in a categorical (discrete) supervised learning ?

☐ kullback-leibler (KL) loss

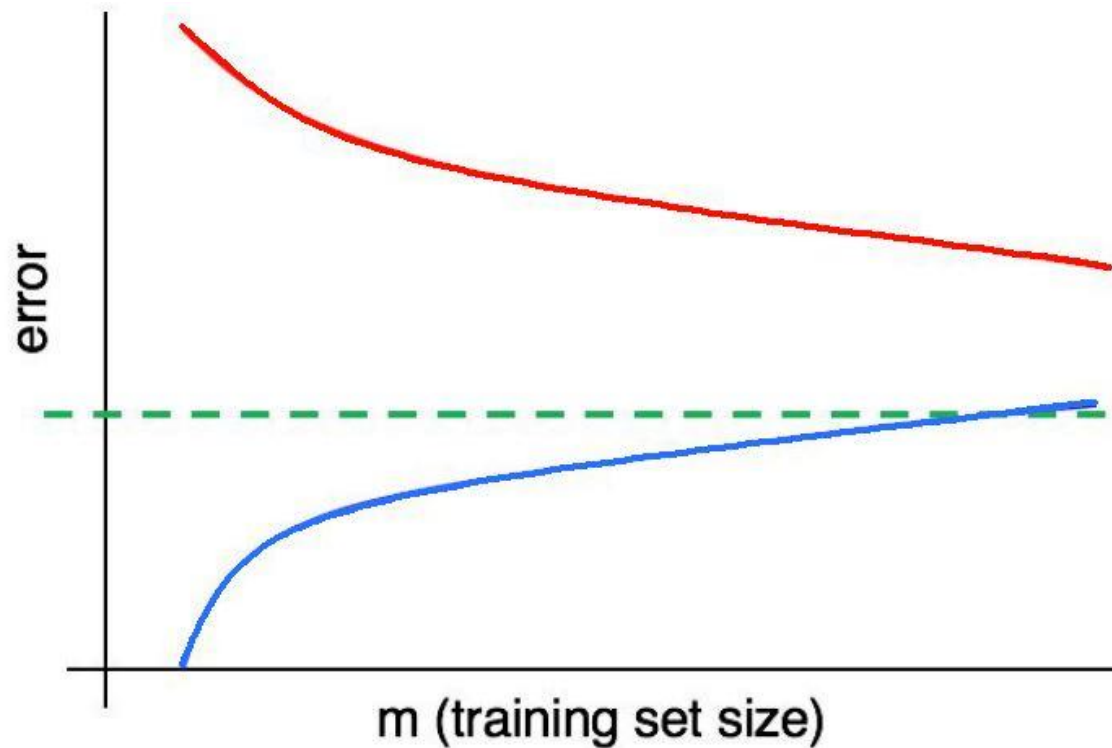
☒ Binary Crossentropy (Correct)

☐ Mean Squared Error (MSE)

☐ Any L2 loss

Question 20:

What is the correct option?



no.	Red	Blue	Green
1.	Validation error	Training error	Test error
2.	Training error	Test error	Validation error
3.	Optimal error	Validation error	Test error
4.	Validation error	Training error	Optimal error

☐ 1

☐ 2

☐ 3

☒ 4

(Correct)

Question 21:

You create a decision tree to show whether someone decides to go to the beach. There are three factors in this decision: rainy, overcast, and sunny. What are these three factors called?

☐ tree nodes

☒ predictors (Correct)

☐ root nodes

☐ deciders

Explanation

These nodes decide whether the someone decides to go to beach or not, for example if its rainy people will mostly refrain from going to beach

Question 22:

You need to quickly label thousands of images to train a model. What should you do?

☐ Set up a cluster of machines to label the images

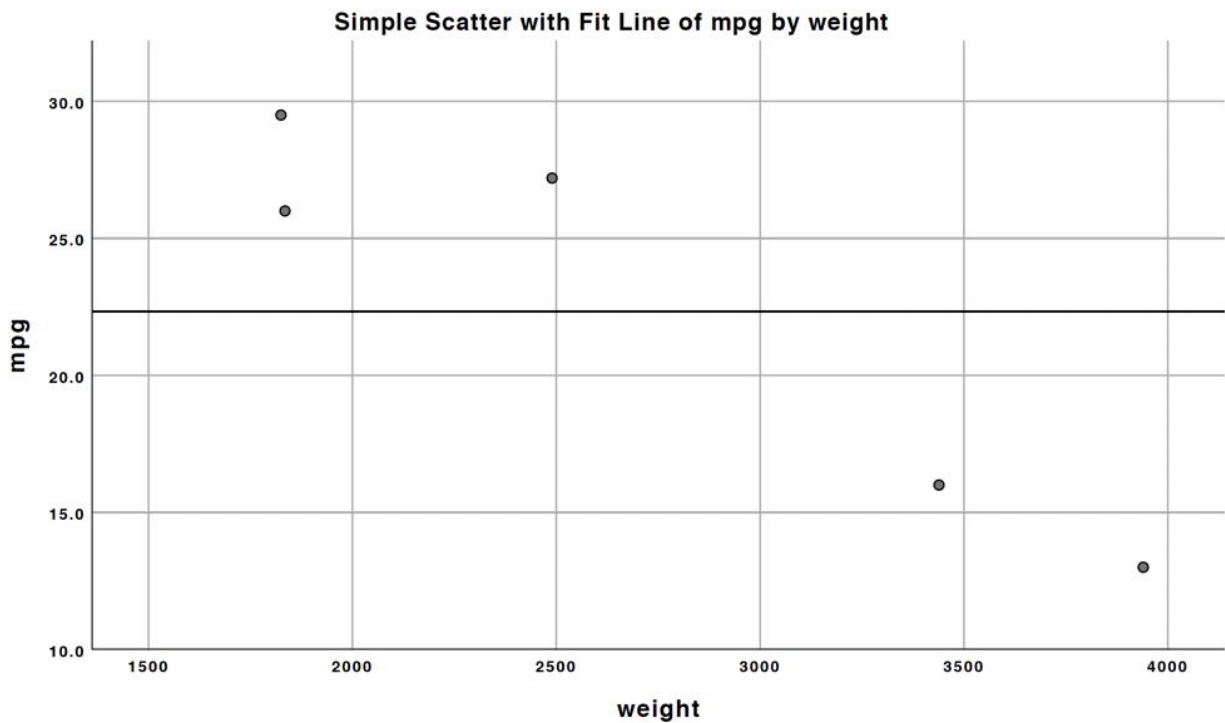
☐ Create a subset of the images and label then yourself

☒ Use naive Bayes to automatically generate labels. (Correct)

☐ Hire people to manually label the images

Question 23:

The fit line and data in the figure exhibits which pattern?



☐ low bias, high variance

☐ high bias, low variance

☐ high bias, high variance

☒ low bias, low variance

(Correct)

Explanation

since the data is accurately classified and is neither overfitting or underfitting the dataset

Question 24:

You need to select a machine learning process to run a distributed neural network on a mobile application. Which would you choose?

☐ Scikit-learn

☐ PyTorch

☒ Tensowflow Lite (Correct)

☐ Tensorflow

Question 25:

Which choice is the best example of labeled data?

☒ a spreadsheet (Correct)

☐ 20,000 recorded voicemail messages

☐ 100,000 images of automobiles

☐ hundreds of gigabytes of audio files