

# How Google Does Machine Learning

## Quiz Question Answers

### Module 1: Introduction to Course

#### *Introduction to ML on Google Cloud*

**Question 1: Which of the following are correct about Google?**

A: Google applies machine learning in pretty much all Google products.

Feedback: This answer is partially correct, please review the module again.

B: Google has produced over 4,000 TensorFlow machine learning models.

Feedback: This answer is partially correct, please review the module again.

C: Google uses machine learning to provide users personalized service.

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above.

Feedback: This answer is correct.

**Question 2: Which of the following Google services depend on machine learning?**

A: Photos

Feedback: This answer is partially correct, please review the module again.

B: Youtube

Feedback: This answer is partially correct, please review the module again.

C: Gmail

Feedback: This answer is partially correct, please review the module again.

\*D: All the above

Feedback: This answer is correct

**Question 3: How are predictions served to decision makers?**

A: Using Notebooks

Feedback: This answer is partially correct, please review the module again.

B: Using applications

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct

D: None of the above

Feedback: This answer is incorrect, please review the module again.

**Question 4: The key feature of Dataflow is which of the following?**

\*A: Cloud Dataflow helps us treat batch and stream data in the same way.

Feedback: This answer is correct

B: Cloud Dataflow helps us treat batch and stream data in a different way.

Feedback: This answer is incorrect, please review the module again.

C: Both A and B

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

**Question 5: What are the advantages of building data pipelines on Google Cloud?**

A: Scalability

Feedback: This answer is partially correct, please review the module again.

B: Reliability

Feedback: This answer is partially correct, please review the module again.

C: Sheer engineering prowess

Feedback: This answer is partially correct, please review the module again.

\*D: All the above

Feedback: This answer is correct.

## Module 2: What it means to be AI First

### *Introduction to AI First*

#### **Question 1: The main stages of Machine Learning models are?**

A: Train an ML model

Feedback: This answer is partially correct, please review the module again.

B: Predict with a trained model

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct.

D: None of the above.

Feedback: This answer is incorrect, please review the module again.

#### **Question 2: What are common mathematical models used in Machine Learning?**

A: Linear methods

Feedback: This answer is partially correct, please review the module again.

B: Decision trees

Feedback: This answer is partially correct, please review the module again.

C: Radial basis functions

Feedback: This answer is partially correct, please review the module again.

\*D: All the above

Feedback: This answer is correct.

#### **Question 3: In the past, why did neural networks models have just a few layers?**

A: Neural networks with lots of layers takes a lot of computing power.

Feedback: This answer is partially correct, please review the module again.

B: As you add more layers, there are more weights to adjust, and you need lots more data available to make those adjustments.

Feedback: This answer is partially correct, please review the module again.

C: If you just add layers, you may run into issues, for example some of the layers may become all zero or blow up and become NAM (not a number).

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above

Feedback: This answer is correct.

#### **Question 4: What are the models included in Google Translate app?**

A: Find the sign

Feedback: This answer is partially correct, please review the module again.

B: Read the sign

Feedback: This answer is partially correct, please review the module again.

C: Detect the language

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above

Feedback: This answer is correct.

#### **Question 5: What is the smart reply feature of Inbox and Gmail?**

\*A: The email program suggests three possible responses to received emails.

Feedback: This answer is correct

B: The email program automatically writes and sends responses based on past conversations.

Feedback: This answer is incorrect, please review the module again.

C: When you hit **Send**, the email program automatically holds the message and then sends it when the program determines the receiver is most likely to read the message.

Feedback: This answer is incorrect, please review the module again.

D: As you respond to a message, the email program suggests words to use based on how smart the receiver is.

Feedback: This answer is incorrect, please review the module again.

## ***Pre-trained ML APIs***

**Question 1: Which of the following is NOT a pre-trained Machine Learning model on Google Cloud?**

A: Vision API

Feedback: This answer is incorrect, please review the module again.

B: Speech API

Feedback: This answer is incorrect, please review the module again.

\*C: Tensorflow

Feedback: This answer is correct.

D: Translation API

Feedback: This answer is incorrect, please review the module again.

**Question 2: Which API lets you perform complex image detection with a single REST API request?**

A: Cloud Speech API

Feedback: This answer is incorrect, please review the module again.

B: Cloud Translation API

Feedback: This answer is incorrect, please review the module again.

\*C: Cloud Vision API

Feedback: This answer is correct.

D: None the above

Feedback: This answer is incorrect, please review the module again.

**Question 3: Which API lets you understand your video's entities at shot, frame, or video level?**

A: Translation API

Feedback: This answer is incorrect, please review the module again.

\*B: Cloud Video Intelligence API

Feedback: This answer is correct

C: Cloud Speech API

Feedback: This answer is incorrect, please review the module again.

D: None the above

Feedback: This answer is incorrect, please review the module again.

**Question 4: What are the benefits of cloud Speech-to-Text API?**

A: Let's you perform speech-to-text transcription

Feedback: This answer is partially correct, please review the module again.

B: Supports speech timestamps

Feedback: This answer is partially correct, please review the module again.

C: Supports profanity filtering

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above

Feedback: This answer is correct

**Question 5: What type of actions can be done by Cloud Natural Language API?**

\*A: Lets you extract entities from your text

Feedback: This answer is correct

B: Gives you the overall sentiment of a sentence or a text document

Feedback: This answer is incorrect, please review the module again.

C: Gives you the font and heading level used in a sentence or test document

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

***All about data***

**Question 1: What would you use to replace user input by machine learning?**

\*A: Pre-trained models.

Feedback: This answer is correct.

B: Neural networks.

Feedback: This answer is incorrect, please review the module again.

C: Labeled data.

Feedback: This answer is incorrect, please review the module again.

D: All of the above.

Feedback: This answer is incorrect, please review the module again.

**Question 2: Which of the following refers to the type of data used in ML models?**

A: Labeled data

Feedback: This answer is partially correct, please review the module again.

B: Unlabeled data

Feedback: This answer is partially correct, please review the module again.

C: Flagged data

Feedback: This answer is not correct, please review the module again.

\*D: Both A and B

Feedback: This answer is correct.

**Question 3: Which of the following are best practices for Data preparation?**

A: Avoid training-serving skew

Feedback: This answer is partially correct, please review the module again.

B: Avoid target leakage

Feedback: This answer is partially correct, please review the module again.

C: Provide a time signal

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above

Feedback: This answer is correct

**Question 4: Which of the following is not part of the ML training phase?**

\*A: Connecting Neural Networks

Feedback: This answer is correct.

B: Evaluating the models

Feedback: This answer is incorrect, please review the module again.

C: Create the models

Feedback: This answer is incorrect, please review the module again.

D: Data management

Feedback: This answer is incorrect, please review the module again.

**Question 5: What's the most efficient way to transcribe speech?**

\*A: Using a speech API.

Feedback: This answer is correct.

B: Collecting audio data, training it, and then predicting with it.

Feedback: This answer is incorrect, please review the module again.

C: Using a Dictionary website for partial transcription, then using ML to fill in what's missing

Feedback: This answer is incorrect, please review the module again.

D: All of the above

Feedback: This answer is incorrect, please review the module again.

## Module 3: How Google Does ML

### *Transform your business*

**Question 1: Which of the following scenarios may require a supervised learning model to be retrained as a new model?**

A: The model was trained on unlabeled data and we now wish to train it on labeled data.

Feedback: Sorry, try again. Supervised learning is done on labeled data. If you need help, review the Two Stages of ML lecture video for the correct answer.

B: The model was trained on labeled data and we now wish to train it more labeled to the data.

Feedback: Sorry, try again. We can train a model on more data (that is in the same format) without having to retrain the model. If you need help, review the Two Stages of ML lecture video for the correct answer.



C: The model was trained on unlabeled data and we now wish to add labels to the data.

Feedback: Sorry, try again. This answer is incorrect because supervised learning models are trained on labeled data. If you need help, review the Two Stages of ML lecture video for the correct answer.

\*D: The model was trained on labeled data and we now wish to correct the labels of the data.

Feedback: Correct! Supervised learning is done on labeled data, so we can discount all the answers that mention unlabeled data. We can also discount #2 - if a model is trained on labeled data, we can just train it on more data.

If a model is trained on data that is incorrect, we need to retrain the model as if it were a new model. If you need help, review the Two Stages of ML lecture video for the correct answer.

**Question 2: A team is preparing to develop and deploy an ML model for use on a shopping website. They have collected a little data to train the model. The team plans on gathering more data once the model is developed. Now they are ready for the next phase, training.**

**Which of these scenarios will most likely lead to a successful deployment of the ML model?**

A: The team should take time to focus on training the perfect model, because deployment is quick and easy.

Feedback: Sorry, try again. This option might be good, except the team does not have a lot of data. Review the "Two stages of ML" video if you need help.

\*B: The team should take time to gather more data because the quality and architecture of the model are affected by the amount of data

Feedback: Correct! The team should take time to gather more data, because with more data, it is possible to create a simpler ML model that performs better. Review the "Two stages of ML" video if you need help.

C: The team should focus on deployment of the model. The model can be weak to start, then be improved when more user data has been accumulated.

Feedback: Sorry, try again. A better model requires a lot of data, which the team does not have. A lot of data can lead to insights in creating the model. Also, deploying a weak model may result in a poor user experience, leading to a loss of users.

**Question 3: An online shopping company has a team of customer representatives read emails from customers. Depending upon the content of the email, the representative routes the email to the appropriate department.**

**The company would like to alleviate the customer representatives task by automating it. Your team has been asked to create an app to read customer emails and determine which department should handle it.**

**Which of these would be a good way to structure the app (choose all that apply)?**

\*A: The team should develop one all-encompassing model that will scan the email content, categorize the content, and determine the appropriate team to receive the email.

Feedback: Yes, there are times when this is the best way to structure the app.

\*B: The team should develop several models, one for each task. They should develop these models from the ground up and not use pre-existing models, to ensure the models are properly trained.

Feedback: Yes, there are times when this is the best way to structure the app.

\*C: Automatic feature extraction

Feedback: Yes, there are times when this is the best way to structure the app.

## ***How Google Does ML***

**Question 1: Which of the following networks is used in identifying faces, objects, and traffic signs?**

\*A: Convolutional Neural Networks

Feedback: This answer is correct.

B: Deep Neural Networks

Feedback: This answer is incorrect, please review the module again.

C: Recurrent Neural Networks

Feedback: This answer is incorrect, please review the module again.

D: None of the above.

Feedback: This answer is incorrect, please review the module again.

**Question 2: Which of the following statement is true about ML systems?**

A: It generates a lot of value for the organization, for customers and for end users.

Feedback: This answer is partially correct, please review the module again.

B: Almost every single one has a team of people reviewing the algorithms, reviewing their responses and doing random sub-samples.

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

**Question 3: Which of the following are facets that differentiate deep learning networks in multilayer networks?**

A: More complex ways of connecting layers

Feedback: This answer is partially correct, please review the module again.

B: Cambrian explosion of computing power to train

Feedback: This answer is partially correct, please review the module again.

C: Automatic feature extraction

Feedback: This answer is partially correct, please review the module again.

\*D: All of the above

Feedback: This answer is correct

**Question 4: Which of the following statement is incorrect?**

A: Machine learning performs some core and numerical tasks

Feedback: This answer is incorrect, please review the module again.

B: Machine learning doesn't serve that task in a website.

Feedback: This answer is incorrect, please review the module again.

C: Machine learning doesn't have unit tests of its own.

Feedback: This answer is incorrect, please review the module again.

\*D: None of the above

Feedback: This answer is correct

## Module 4: Inclusive ML

### *Inclusive ML*

#### **Question 1: Which of the following are correct about Facets?**

A: It's an open source data visualization

Feedback: This answer is partially correct, please review the module again.

B: Facets was developed at Google and is one of the ways in which you can make machine learning models more inclusive

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct.

D: None of the above.

Feedback: This answer is incorrect, please review the module again.

#### **Question 2: The things you incorrectly do not predict, things you exclude when instead it should have been included is called?**

\*A: False negatives

Feedback: This answer is correct

B: False positives

Feedback: This answer is incorrect, please review the module again.

C: True positives

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

#### **Question 3: Which of the following help identify areas where a machine learning system could be more inclusive?**

A: Confusion matrix

Feedback: This answer is incorrect, please review the module again.

\*B: Evaluation metrics

Feedback: This answer is correct

C: Both A and B

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

**Question 4; Which approach is followed to achieve a better performance across subgroups?**

\*A: Equality of opportunity

Feedback: This answer is correct

B: Evaluation metrics

Feedback: This answer is incorrect, please review the module again.

C: Confusion matrix

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

**Question 5: Which of the following are the parts of Facets?**

A: Overview

Feedback: This answer is partially correct, please review the module again.

B: Dive

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct.

D: None of the above.

Feedback: This answer is incorrect, please review the module again.

**Question 6: The confusion matrix helps which of the following?**

A: Understanding inclusion and how to introduce inclusion across different subgroups within your data

Feedback: This answer is partially correct, please review the module again.

B: Evaluating performance in machine learning

Feedback: This answer is partially correct, please review the module again.

\*C: Both A and B

Feedback: This answer is correct.

D: None of the above.

Feedback: This answer is incorrect, please review the module again.

**Question 7: What do you call the things you incorrectly predicted, and things you include that aren't in the label and should have instead been excluded?**

A: False negatives

Feedback: This answer is incorrect, please review the module again.

\*B: False positives

Feedback: This answer is correct

C: True positives

Feedback: This answer is incorrect, please review the module again.

D: None of the above

Feedback: This answer is incorrect, please review the module again.

## Module 5: Python Notebooks in the Cloud

### *Python Notebooks in the Cloud*

**Question 1: You are going to develop an ML model. You are in Canada and the rest of the team is in Mexico.**

Your team wants to use Google Cloud with Python Notebook. Which of the following statements support your decision.

A: Cloud AI Platform Notebook runs on virtual machines.

Feedback: This answer is incorrect, please review the module again.

\*B: Cloud AI Platform Notebook is hosted in the cloud.

Feedback: Good job. Notebooks hosted in the cloud will make global collaboration much easier.

C: Cloud AI Platform Notebook contains both markup and output.

Feedback: This answer is incorrect, please review the module again.

**Question 2: Your team has decided to use the Compute Engine, Cloud Storage, and Cloud AI Platform Notebook for ML model development**

**Which of the following statements are applicable to your situation (choose all that apply)**

A: You must choose your virtual machine configuration carefully, changing it later will be difficult.  
Feedback: This should not be selected, changing configuration can be easily done at any time.

\*B: Every member of the team, regardless of their location, can directly read data from Cloud Storage.

Feedback: Correct - this is true!

\*C: Latency of data access can be a concern, so carefully select the zone for data storage.

Feedback: Correct - this is true!

**Question 3: Complete this sentence by filling in each blank with a single word:**

**The third wave of cloud is \_\_\_\_\_ so you can focus on data \_\_\_\_\_ instead of infrastructure.**

**Word bank: insights, hardware, infrastructure, scalable, cloud-first, serverless, machine learning, Google Cloud, iPython Notebooks**

A: iPython Notebooks, hardware

Feedback: This answer is incorrect, please review the module again.

B: Insights, Google Cloud

Feedback: This answer is incorrect, please review the module again.

C: Scalable, hardware

Feedback: This answer is incorrect, please review the module again.

\*D: Serverless, insights

Feedback: This answer is correct.