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Exam Professional Machine Learning Engineer All Questions
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📄 **EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 258 DISCUSSI...**

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 258
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You work for an international manufacturing organization that ships scientific products all over the world. Instruction manuals for these products need to be translated to 15 different languages. Your organization's leadership team wants to start using machine learning to reduce the cost of manual human translations and increase translation speed. You need to implement a scalable solution that maximizes accuracy and minimizes operational overhead. You also want to include a process to evaluate and fix incorrect translations. What should you do?

A. Create a workflow using Cloud Function triggers. Configure a Cloud Function that is triggered when documents are uploaded to an input Cloud Storage bucket. Configure another Cloud Function that translates the documents using the Cloud Translation API, and saves the translations to an output Cloud Storage bucket. Use human reviewers to evaluate the incorrect translations.

B. Create a Vertex AI pipeline that processes the documents launches, an AutoML Translation training job, evaluates the translations and deploys the model to a Vertex AI endpoint with autoscaling and model monitoring. When there is a predetermined skew between training and live data, re-trigger the pipeline with the latest data.

C. Use AutoML Translation to train a model. Configure a Translation Hub project, and use the trained model to translate the documents. Use human reviewers to evaluate the incorrect translations.

D. Use Vertex AI custom training jobs to fine-tune a state-of-the-art open source pretrained model with your data. Deploy the model to a Vertex AI endpoint with autoscaling and model monitoring. When there is a predetermined skew between the training and live data, configure a trigger to run another training job with the latest data.

**Show Suggested Answer**

## Comments

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👤 **daidai75** `Highly Voted 👍` 9 months ago

`Selected Answer: C`

The answer is C, to use Translation Hub
1.Accuracy maximization: AutoML Translation uses machine learning to train a translation model on your specific data, which can lead to higher accuracy compared to generic translation models.
2.Minimal operational overhead: AutoML Translation handles the training and deployment of the translation model, reducing the need for manual intervention.
3.Evaluation and correction: The solution includes human reviewers to evaluate and correct any incorrect translations, ensuring high quality.

👍 ↩ 🚩 upvoted 5 times

👤 **AzureDP900** `Most Recent ⊙` 3 months, 2 weeks ago

Using AutoML Translation (Option C) allows you to train a model on your data, which can be used for translation. You can then configure a Translation Hub project to manage the translation process and use human reviewers to evaluate any incorrect translations.
It is scalable solution that maximizes accuracy and minimizes operational overhead.

👍 ↩ 🚩 upvoted 1 times

👤 **gscharly** 6 months ago

`Selected Answer: C`

if we assume there is training data available (source-target language pairs) then I would go with C.

👍 ↩ 🚩 upvoted 1 times

👤 **fitri001** 6 months, 1 week ago

`Selected Answer: C`

Option A: Cloud Functions are suitable for simple tasks. This approach wouldn't leverage machine learning for improved translations and lacks features like model evaluation and retraining.
Option B: Vertex AI pipelines with AutoML Translation training can be powerful, but it might be overkill for this scenario. Additionally, retraining based on a predetermined data skew might not be necessary if human review is effective at catching and correcting errors.
Option D: While fine-tuning a pre-trained model with Vertex AI custom training offers flexibility, it requires more expertise and ongoing maintenance compared to the simpler approach of using AutoML Translation.

👍 ↩ 🚩 upvoted 3 times

👤 **b2aaace** 6 months, 1 week ago

Answer A

It is the only option that makes sense all over. I would go for C if the first sentence was
not there "Use AutoML Translation". you can't use autoML because there is no training data.

👍 ↩ 🚩 upvoted 2 times

👤 **omermahgoub** 6 months, 1 week ago

`Selected Answer: C`

C: Use AutoML Translation with Translation Hub. Here's why:
1. Scalability:
- AutoML Translation: This simplifies model training without extensive manual configuration.
- Translation Hub: Centrally stores and manages your translation models, facilitating deployment and reuse across various applications, promoting scalability for your 15 target languages.
2. Accuracy and Evaluation:
- AutoML Translation: while pre-trained models might not be perfect, AutoML Translation lets you fine-tune the model with your specific scientific domain data (instruction manuals) to improve accuracy.
- Human Review and Iteration: This allows for evaluation and correction of any inaccurate translations, improving overall quality. This is crucial for technical documents like instruction manuals.

👍 ↩ 🚩 upvoted 2 times

👤 **omermahgoub** 6 months, 1 week ago

Why not B: Retraining the model upon data skew detection can become cumbersome and impact translation speed.

Translation Hub offers a more streamlined approach for managing model updates.

👍 ↩ 🏳 upvoted 1 times

⊟ 👤 **emsherff** 6 months, 2 weeks ago

Selected Answer: C

Translation Hub can manage translation workloads at scale and also integrate human feedback where required.

👍 ↩ 🏳 upvoted 1 times

⊟ 👤 **edoo** 7 months, 2 weeks ago

So what is the deal? pikachu007 authors the question, adds C as suggested answer and then vote for B?

👍 ↩ 🏳 upvoted 2 times

⊟ 👤 **Sunny_M** 8 months ago

Selected Answer: B

Agree with pikachu007, I think there is no point in using ML once the manual(human) mode is added.

👍 ↩ 🏳 upvoted 1 times

⊟ 👤 **b1a8fae** 9 months ago

Selected Answer: C

Translation Hub is a service that allows you to manage and automate your translation workflows on Google Cloud. You can use Translation Hub to upload the documents to a Cloud Storage bucket, select the source and target languages, and apply the trained model to translate the documents. You can use human reviewers to improve the quality and accuracy of the translations, and provide feedback to the ML model.

👍 ↩ 🏳 upvoted 3 times

⊟ 👤 **pikachu007** 9 months, 1 week ago

Selected Answer: B

Option A: While Cloud Functions provide automation, the Cloud Translation API uses generic models that might not be as accurate for domain-specific content, potentially leading to more human corrections.
Option C: Translation Hub offers collaboration features but lacks automated model training and pipeline orchestration, requiring more manual effort.
Option D: Vertex AI custom training jobs provide flexibility but require more expertise and effort compared to AutoML Translation, and the pre-trained model might not be as well-suited for the specific domain.

👍 ↩ 🏳 upvoted 2 times

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