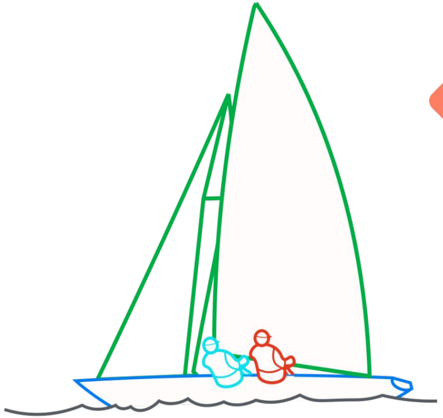
DAG Authoring without PhD

Filip Knapik, Rafał Biegacz



Airflow Summit

Let’s flow together

September 19-21, 2023,
Toronto, Canada

About us

Filip Knapik

Group Product Manager
Cloud Composer

Working with Airflow for ~4 years
Ex-Product Manager for Google Workflows

Rafal Biegacz

Senior Eng Manager
Cloud Composer

Working with Airflow for ~4 years
Member of Airflow Summit Organizing Team

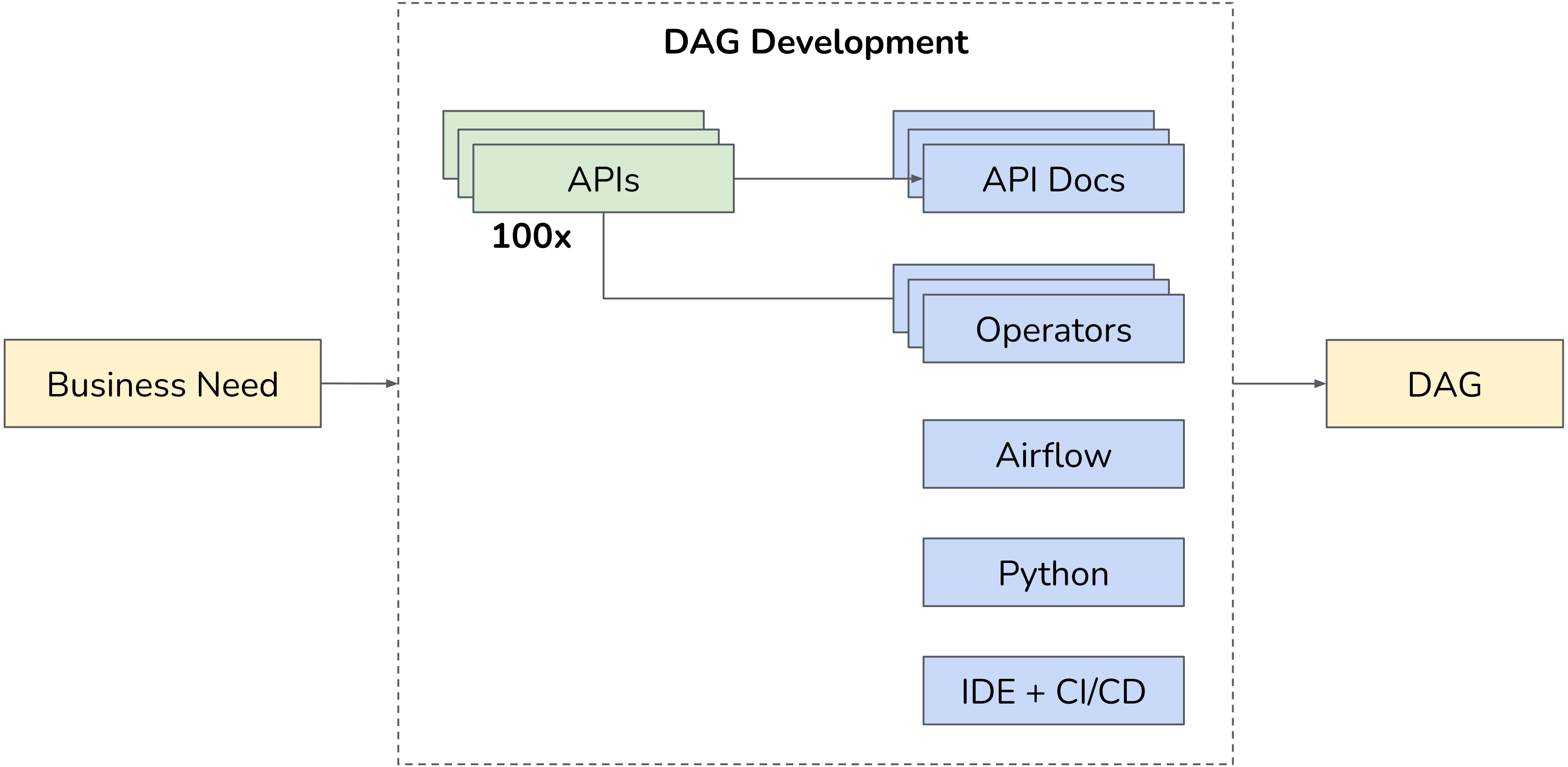
Contacting Us / Where to Find Us

During the conference **visit us at Google Booth** to learn more about:

- Serverless Composer
- Disaster Recovery & Data Lineage support in Composer
- Support for Public Sector and Assured Workloads

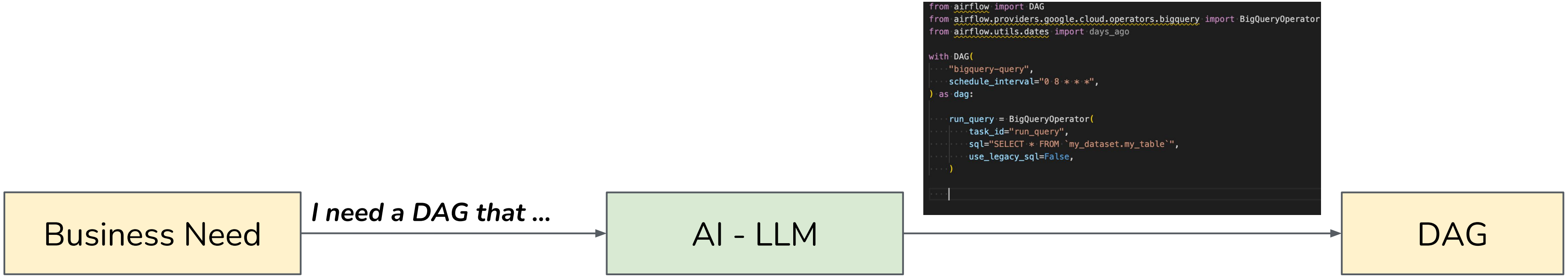
Fill in the form: bit.ly/airflow-summit-2023-composer if you would like to meet, request more information or you are interested in getting a voucher for GCP credits.

DAG Authoring is non-trivial



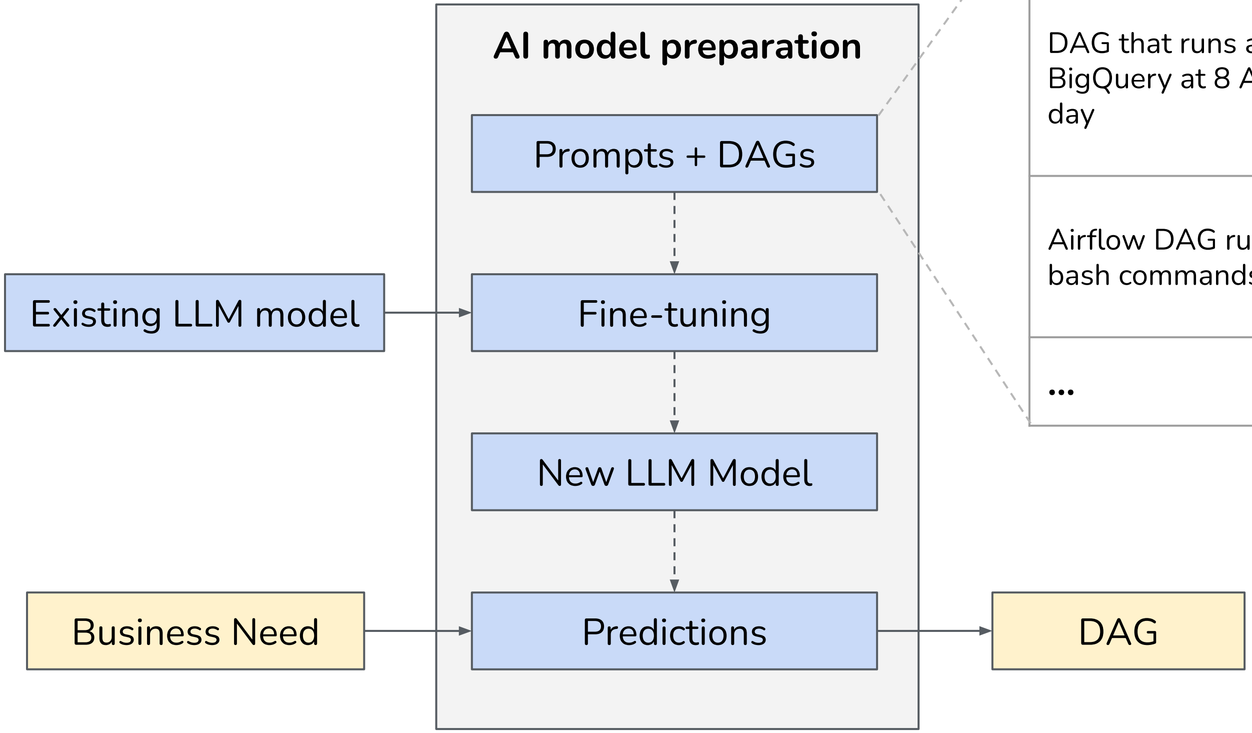
Can it be any easier?

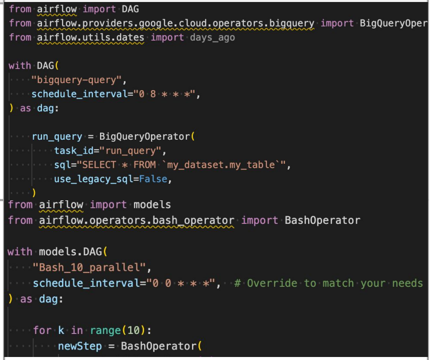
LLM-based Generative AI model acting as a translation layer



```python
from airflow import DAG
from airflow.providers.google.cloud.operators.bigquery import BigQueryOperator
from airflow.utils.dates import days_ago

with DAG(
    "bigquery-query",
    schedule_interval="0 8 * * *",
) as dag:

    run_query = BigQueryOperator(
        task_id="run_query",
        sql="SELECT * FROM `my_dataset.my_table`",
        use_legacy_sql=False,
    )

    
```

How to get there?



Prompt	DAG
DAG that runs a query in BigQuery at 8 AM every day	
Airflow DAG running 10 bash commands in parallel	
...	

```python
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        use_legacy_sql=False,
    )
```
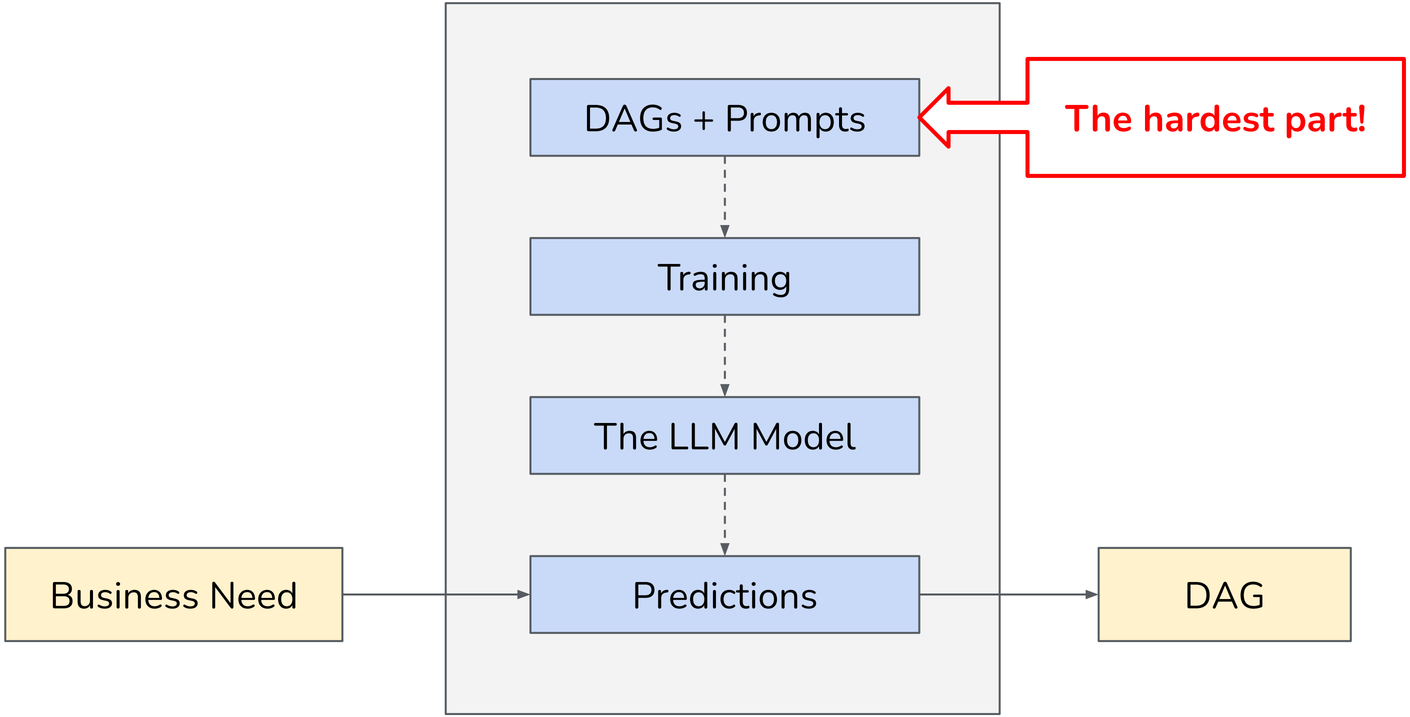
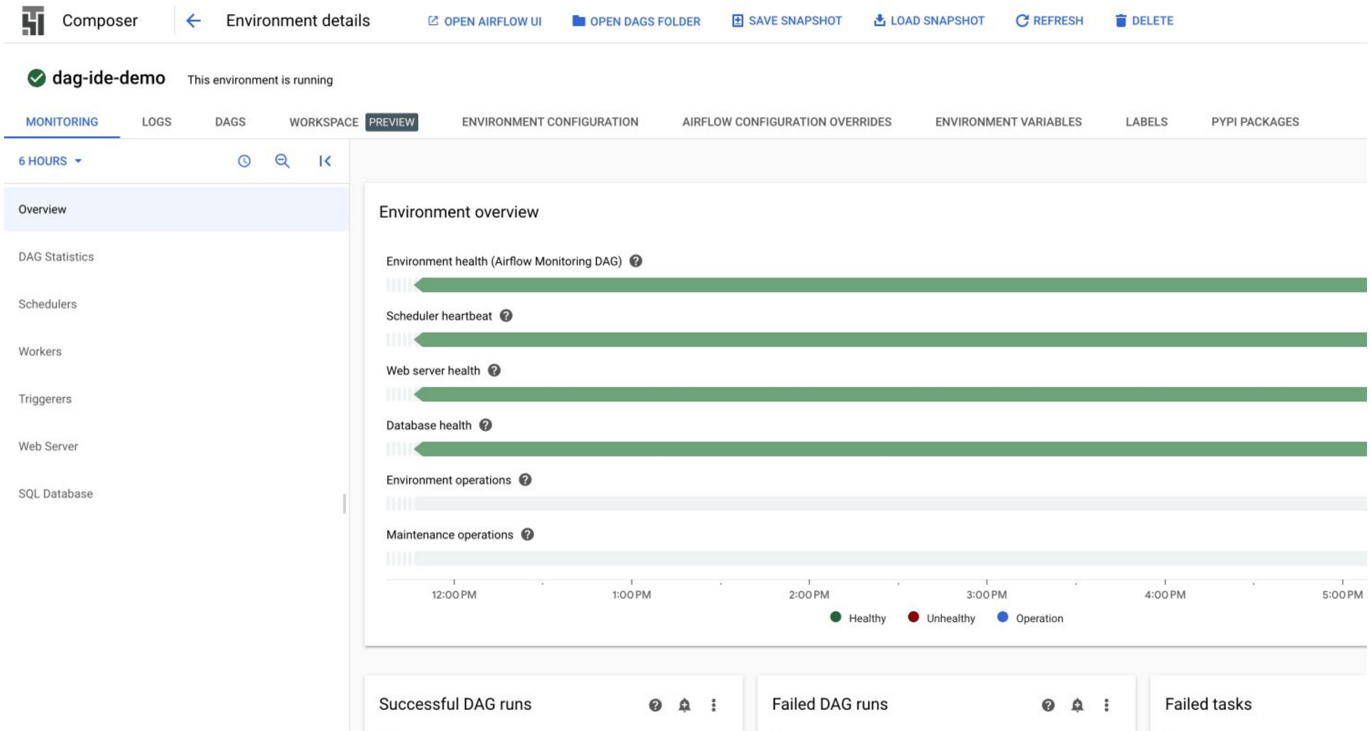

```python
from airflow import models
from airflow.operators.bash_operator import BashOperator

with models.DAG(
    "Bash_10_parallel",
    schedule_interval="0 0 * * *",  # Override to match your needs
) as dag:

    for k in range(10):
        newStep = BashOperator(
```

The challenge



Where we are

Prompt: *Write Airflow DAG that that runs BigQuery query using BigQueryInsertJobOperator to get number of GitHub commits in May 2022. Please, use public dataset for github data published by Google Cloud Platform*



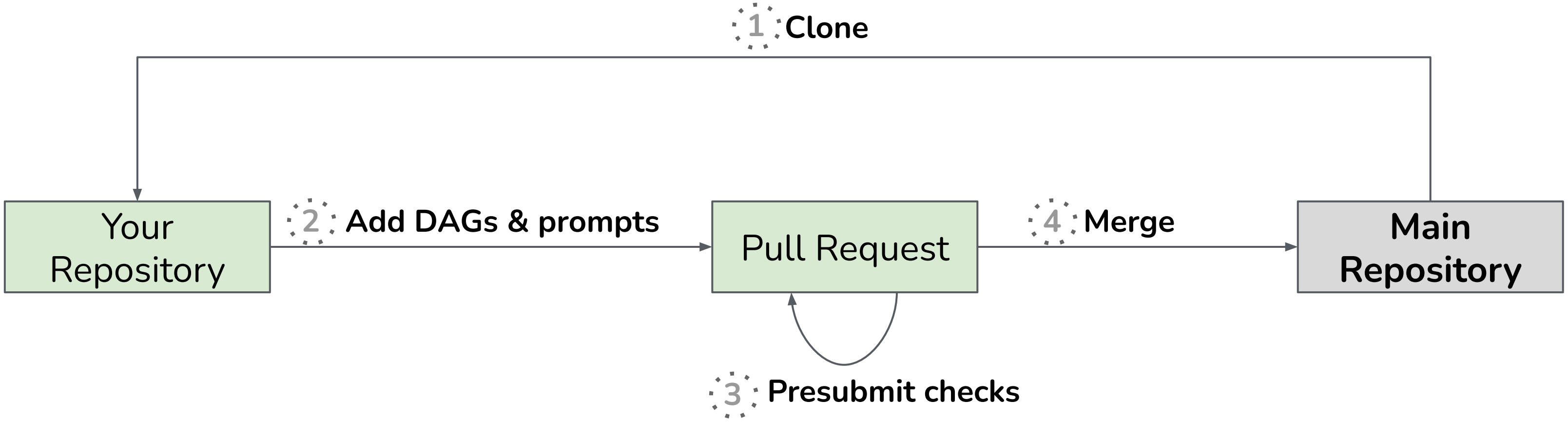
Google Cloud

Our proposal

Establish an open source Airflow DAGs + Prompts repository to enable LLM models creation & experimentation by the community

- Google establishes open source repository
- Google donates its Airflow DAGs training data
- Community joins in and contributes with its own DAGs examples
- Community can build its own DAG code generation models and tools

Contribution process

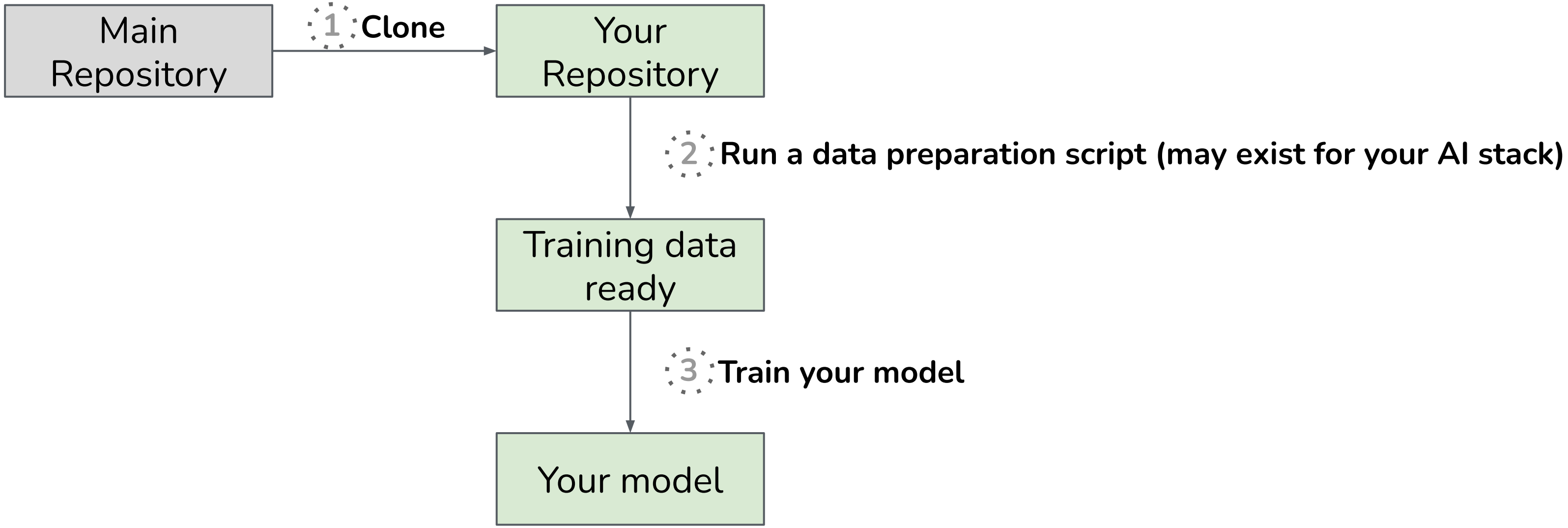


- Python correctness
- Registration in DAG Bag
- Prompts quality

Contribution guidelines

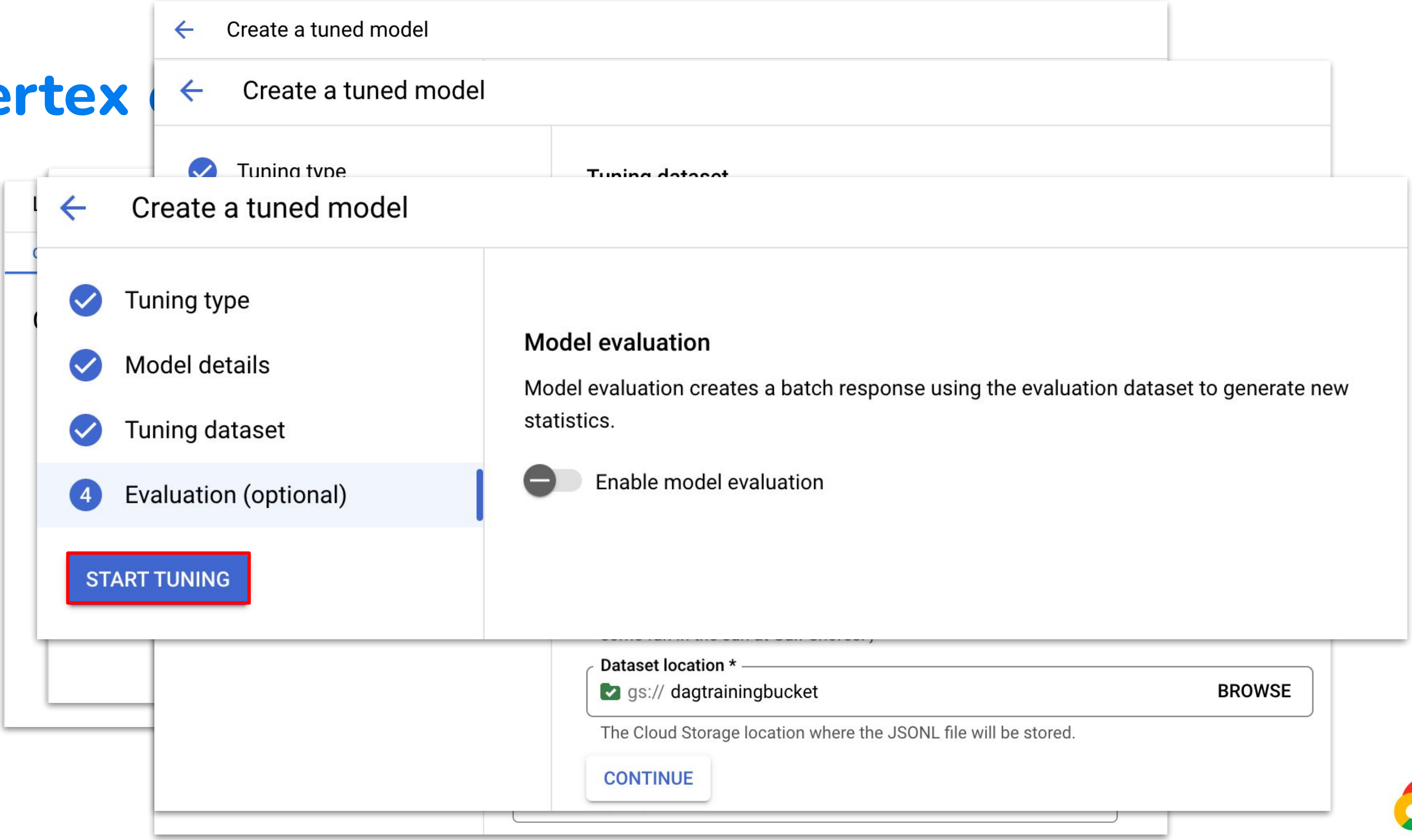
- The more (DAG, prompt) pairs are contributed, the better
- Ensure that DAGs and prompts are:
  - Free of any PII references
  - Following latest Airflow development practices
  - Using particular versions of python modules and provider packages
  - As diverse as possible
- Use examples that you can contribute under Apache 2.0 license

How to use it?



Google Cloud

Vertex



Create a tuned model

Create a tuned model

✓ Tuning type

Tuning dataset

Create a tuned model

✓ Tuning type

✓ Model details

✓ Tuning dataset

4 Evaluation (optional)

START TUNING

Model evaluation

Model evaluation creates a batch response using the evaluation dataset to generate new statistics.

○ Enable model evaluation

Dataset location *

✓ gs:// dagtrainingbucket

BROWSE

The Cloud Storage location where the JSONL file will be stored.

CONTINUE

Next Steps

1. Composer team will send a call for action email on Airflow Dev list
2. All community members are encouraged to join us!

Questions?

Optionally share some contact info like
email, blog or social media handles

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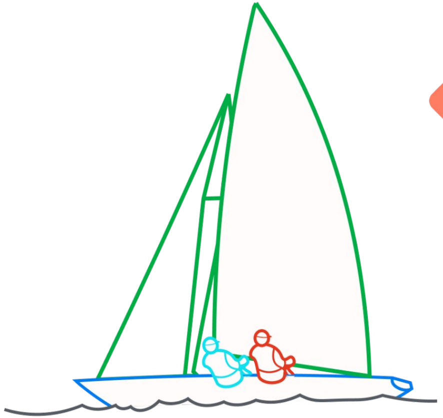

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