

Vertex AI AutoML

1. Movie Rating prediction

Trained Model image

←

Movies

>

Version 1

VIEW DATASET

EXPORT

EVALUATE

DEPLOY & TEST

BATCH PREDICT

VERSION DETAILS

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated	API	Labels	Encryption
Movie Prediction	1817228837923061760	Active	1	—	asia-south1	Disabled	—	—	Nov 30, 2023, 10:55:27 AM	SAMPLE REQUEST		Google-managed

Test your model

PREVIEW

Feature column name	Type	Value	Local feature importance
id	Numerical	3837	—
name	Text	The	—
rating	Text	R	—
genre	Text	Comedy	—
year	Numerical	2000	—
released	Text	8/3/2001	—

Predicted column not yet known

Prediction result

—

Trained model deployment

Vertex AI

Colab Enterprise

Workbench

GENERATIVE AI STUDIO

Overview

Language

Vision

Speech

DATA

Feature Store

Datasets

Labeling tasks

MODEL DEVELOPMENT

Training

Experiments

Metadata

DEPLOY AND USE

Model Registry

←

Movies

>

Version 1

VIEW DATASET

EXPORT

EVALUATE

DEPLOY & TEST

BATCH PREDICT

VERSION DETAILS

Use your edge-optimized model

Container

Export your model as a TF Saved Model to run on a Docker container.

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated	API	Labels	Encryption
No active endpoints containing this model												

Test your model

PREVIEW

Trained Model Test/Prediction image

← Movies > Version 1 ▾

VIEW DATASET

EXPORT

EVALUATE

DEPLOY & TEST

BATCH PREDICT

VERSION DETAILS

Test your model

PREVIEW

Feature column name	Type	Value	Local feature importance
Id	Numerical	3837	0
name	Text	The	0
rating	Text	R	0
genre	Text	Comedy	0
year	Numerical	2000	0
released	Text	8/3/2001	0
director	Text	John	0
writer	Text	John	0
star	Text	Michael	0

Prediction result

Selected label

7

Baseline prediction value: 0.36101892590522766

Confidence score: 0.3610188961029053

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated	API	Labels	Encryption
Movie Prediction	3573632692597555200	Active	1	—	asia-south1	Disabled	—	—	Nov 30, 2023, 11:36:16 AM	SAMPLE REQUEST		Google-managed

Test your model

PREVIEW

Feature column name	Type	Value	Local feature importance
Id	Numerical	3837	0
name	Text	The	0
rating	Text	R	0
genre	Text	Comedy	0
year	Numerical		0

Prediction result

Selected label

7

Baseline prediction value: 0.36101892590522766

Confidence score: 0.3610188961029053

Evaluation Details



Labels		Evaluation details										
Filter		Confidence threshold ⓘ 0.5										
All labels	0.483											
7	0.54											
0	0.001											
4	0.101											
9	0.104											
6	0.483											
2	0.005											
3	0.008											
8	0.45											
5	0.361											
		Predicted label										
True label		7	6	5	8	4	3	9	2	0		
7		73%	21%	0%	6%	0%	0%	0%	0%	0%		
6		37%	60%	0%	3%	0%	0%	0%	0%	0%		
5		10%	80%	0%	10%	0%	0%	0%	0%	0%		
8		61%	0%	0%	39%	0%	0%	0%	0%	0%		
4		25%	75%	0%	0%	0%	0%	0%	0%	0%		
3		0%	0%	0%	0%	0%	0%	0%	0%	0%		
9		50%	0%	0%	50%	0%	0%	0%	0%	0%		
2		0%	0%	0%	0%	0%	0%	0%	0%	0%		
0		100%	0%	0%	0%	0%	0%	0%	0%	0%		

ALL other images:

You're working in [Customer propensity to buy](#)

Project number: 377936892127



Project ID: customer-propensity-to-buy



[Dashboard](#)

[Recommendations](#)

Create a VM

Run a query in BigQuery

Create a GKE cluster

Create a storage bucket

Quick access

API & Services

IAM & Admin

Billing

Compute Engine

Cloud Storage

BigQuery

VPC network

Kubernetes Engine

[View all products](#)

Vertex AI

Model Garden

Pipelines

NOTEBOOKS

Colab Enterprise

Workbench

GENERATIVE AI STUDIO

Overview

Language

Vision

Speech

DATA

Feature Store

Datasets

Labeling tasks

MODEL DEVELOPMENT

Training

Experiments

Marketplace

Create dataset

Dataset name *


Movies

Can use up to 128 characters.

Select a data type and objective


First select the type of data your dataset will contain. Then select an objective, which is the outcome that you want to achieve with the trained model. [Learn more](#)

IMAGE TABULAR TEXT VIDEO



☒ Regression/classification

Predict a target column's value. Supports tables with hundreds of columns and millions of rows.



☐ Forecasting

Predict the likelihood of certain events or demand.

Region

asia-south1 (Mumbai)

ADVANCED OPTIONS

CREATE CANCEL

Train new model

☒ Training method

☒ Model details

☒ Join Featurestore (optional)

☒ Training options

5 Compute and pricing

START TRAINING

CANCEL

Enter the maximum number of node hours you want to spend training your model.

You can train for as little as 1 node hour. You may also be eligible to train with free node hours. [Pricing guide](#)

Budget *

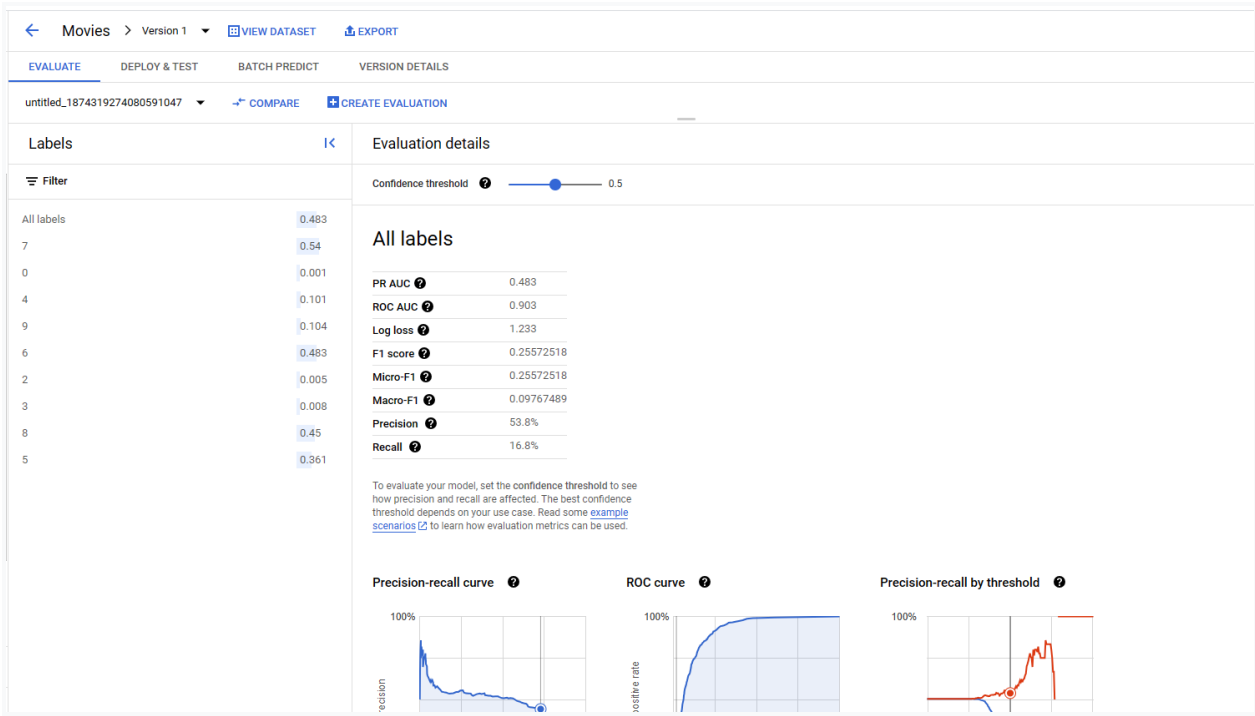
1

Maximum node hours

Estimated completion: Nov 30, 2023 8 AM GMT-8

☒ Enable early stopping

Ends model training when no more improvements can be made and refunds leftover training budget. If early stopping is disabled, training continues until the budget is exhausted.



Google Cloud

Movie Prediction ▾

vert

Search

Vertex AI

← Movies

SOURCE

ANALYZE

Add data to your dataset

Before you begin, review the data guide to make sure your data is formatted correctly and optimized for the best results.

VIEW DATA GUIDE

Select a data source

CSV file. Can be uploaded from your computer or on Cloud Storage. [Learn more](#)

BigQuery. Select a table or view from BigQuery. [Learn more](#)

☒ Upload CSV files from your computer

☐ Select CSV files from Cloud Storage

☐ Select a table or view from BigQuery

Upload CSV files from your computer

Add up to 500 CSV files per upload. The files will be stored in a new Cloud Storage bucket ([charges apply](#)). Data from multiple files will be referenced as one dataset.

SELECT FILES

Summary

\$625,000

\$975,000

You can build two model types with tabular data. The model type is automatically chosen based on the data type of your target column.

Regression models predict a numeric value. For example, predicting home prices or consumer spending.

Classification models predict a category from a fixed number of categories. Examples include predicting whether an email is spam or not, or classes a student might be interested in attending.

```
Google Cloud | Movie Prediction | Search (/) for resources, docs, products, and more | Search | [Icons] | J

CLOUD SHELL | Terminal | (movie-prediction-406713) X + - | Open Editor | [Icons] | - [Icons] | X

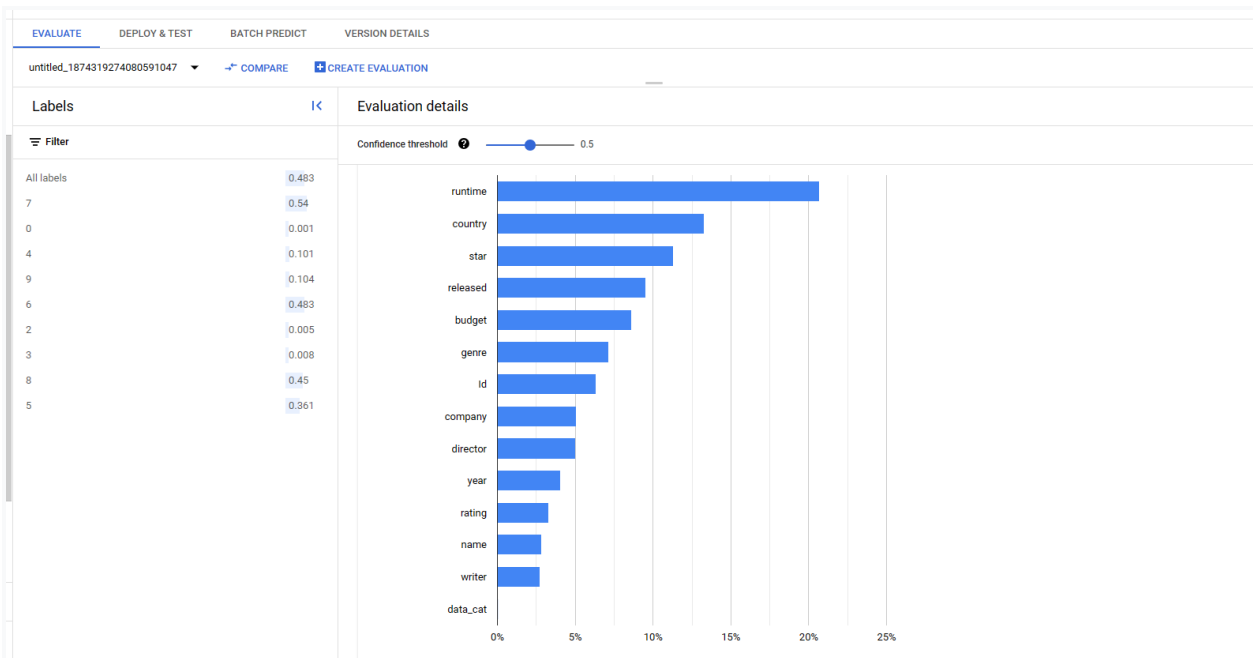
Welcome to Cloud Shell. Type "help" to get started.
Your Cloud Platform project in this session is set to movie-prediction-406713.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
joash_muganda@cloudshell:~ (movie-prediction-406713) $ gcloud auth list
Credentialed Accounts

ACTIVE:
ACCOUNT: joash.muganda@gmail.com

To set the active account, run:
$ gcloud config set account 'ACCOUNT'

joash_muganda@cloudshell:~ (movie-prediction-406713) $ gcloud config list project
[core]
project = movie-prediction-406713

Your active configuration is: [cloudshell-7960]
joash_muganda@cloudshell:~ (movie-prediction-406713) $ bq mk --location=asia-south1 movies
/usr/lib/google-cloud-sdk/platform/bq/bq.py:17: DeprecationWarning: 'pipes' is deprecated and slated for removal in Python 3.13
  import pipes
Dataset 'movie-prediction-406713:movies' successfully created.
joash_muganda@cloudshell:~ (movie-prediction-406713) $ git clone https://github.com/AbiraniSukumaran/movie-score.git
Cloning into 'movie-score'...
remote: Enumerating objects: 176, done.
remote: Counting objects: 100% (176/176), done.
remote: Compressing objects: 100% (120/120), done.
remote: Total 176 (delta 65), reused 102 (delta 36), pack-reused 0
Receiving objects: 100% (176/176), 728.70 KiB | 5.29 MiB/s, done.
Resolving deltas: 100% (65/65), done.
joash_muganda@cloudshell:~ (movie-prediction-406713) $ cd movie-score
joash_muganda@cloudshell:~/movie-score (movie-prediction-406713) $ bq load --source_format=CSV --skip_leading_rows=1 movies.movies_score \
./movies_bq_esc.csv \ id:numeric,name:string,rating:string,genre:string,year:numeric,release:string,score:string,director:string,writer:string,star:string,country:string,budget:numeric,company:string,runtime:numeric,data_cat:string
/usr/lib/google-cloud-sdk/platform/bq/bq.py:17: DeprecationWarning: 'pipes' is deprecated and slated for removal in Python 3.13
  import pipes
Upload complete.
Waiting on bqjob_r416f05759a68dc_000001bc208332cb_1 ... (3s) Current status: DONE
joash_muganda@cloudshell:~/movie-score (movie-prediction-406713) $ SELECT name, rating, genre, runtime FROM movies.movies_score limit 3;
-bash: SELECT: command not found
joash_muganda@cloudshell:~/movie-score (movie-prediction-406713) $ bq query --use_legacy_sql=false \
SELECT name, rating, genre, runtime FROM movies.movies_score limit 3;
/usr/lib/google-cloud-sdk/platform/bq/bq.py:17: DeprecationWarning: 'pipes' is deprecated and slated for removal in Python 3.13
  import pipes
+-----+
| name | rating | genre | runtime |
+-----+
| Love by Drowning | 8 | Drama | 121 |
| It's Just Us | Not Rated | Drama | 120 |
| The Robinsons | Not Rated | Action | 90 |
+-----+
joash_muganda@cloudshell:~/movie-score (movie-prediction-406713) $
```



Vertex AI

Colab Enterprise

Workbench

GENERATIVE AI STUDIO

Overview

Language

Vision

Speech

DATA

Feature Store

Datasets

Labeling tasks

MODEL DEVELOPMENT

Training

Experiments

Metadata

DEPLOY AND USE

Model Registry

← Movies > Version 1 VIEW DATASET EXPORT

EVALUATE DEPLOY & TEST BATCH PREDICT VERSION DETAILS

Use your edge-optimized model

Container

Export your model as a TF Saved Model to run on a Docker container.

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ↓	API	Labels	Encryption
No active endpoints containing this model												

Test your model PREVIEW

← Movies > Version 1 VIEW DATASET EXPORT

EVALUATE DEPLOY & TEST BATCH PREDICT VERSION DETAILS

untitled_1874319274080591047 COMPARE CREATE EVALUATION

Labels

Filter

All labels0.483

70.54

00.001

40.101

90.104

60.483

20.005

30.008

80.45

50.361

Evaluation details

Confidence threshold 0.5

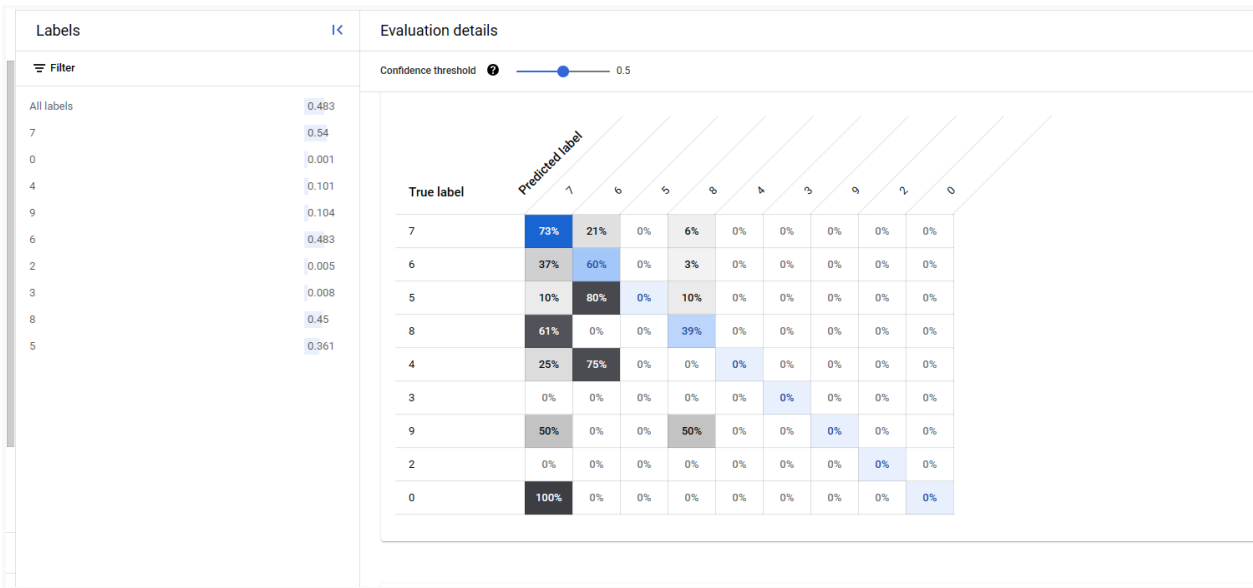
Precision-recall curve

ROC curve

Precision-recall by threshold

Confusion matrix

This table shows how often the model classified each label correctly (in blue), and which labels were most often confused for that label (in gray).



Deploy to endpoint

1 Define your endpoint

2 Model settings

3 Model monitoring

4 Monitoring objectives

DEPLOY

CANCEL

☒ Create new endpoint

☐ Add to existing endpoint

Endpoint name *

Movie Prediction

Location

Region

asia-south1 (Mumbai)

Access

Determines how your endpoint can be accessed. By default, endpoints are available for prediction serving through a REST API. Endpoint access can't be changed after the endpoint is created.

☒ Standard

Makes the endpoint available for prediction serving through a REST API. AutoML and custom-trained models can be added to standard endpoints.

☐ Private

Create a private connection to this endpoint using a VPC network and [private services access](#). Only custom-trained and tabular models can be added to private endpoints. [Learn more](#)

ADVANCED OPTIONS

CONTINUE

Deploy to endpoint

✓ Define your endpoint

2 Model settings

3 Model monitoring

4 Monitoring objectives

DEPLOY

CANCEL

Model settings ?

New model



Movies (Version 1)

Traffic split * % ?

Compute resources

Choose how compute resources will serve prediction traffic to your model

- **Autoscaling:** If you set a minimum and maximum, compute nodes will scale to meet traffic demand within those boundaries
- **No scaling:** If you only set a minimum, then that number of compute nodes will always run regardless of traffic demand (the maximum will be set to minimum)

Once scaling settings are set, they can't be changed unless you redeploy the model. [Pricing guide](#)

Minimum number of compute nodes *

Default is 1. If set to 1 or more, then compute resources will continuously run even without traffic demand. This can increase cost but avoid dropped requests due to node initialization.

Maximum number of compute nodes (optional)

Enter a number equal to or greater than the minimum nodes. Can reduce costs but may cause reliability issues for high traffic.

✓ ADVANCED SCALING OPTIONS

Machine type * ▼ ?

Logging

Logging settings are permanent for this endpoint, and Logging charges will apply. To change your logging preference in the future, create a new endpoint. [Learn more](#)

Deploy to endpoint

- ✓ Define your endpoint
- ✓ Model settings
- 3 Model monitoring**
- 4 Monitoring objectives

DEPLOY CANCEL

i Model monitoring applies to **all models** deployed on this endpoint. [Learn more](#)

Model monitoring

Models used in production require continuous monitoring to ensure that they perform as expected. Use model monitoring to track training-serving skew or prediction drift, then set up alerts to notify you when thresholds are crossed. [Learn more](#)

Model monitoring supports AutoML tabular and custom-trained models and incurs additional charges. [Learn more](#)

☒ Enable model monitoring for this endpoint

Monitoring job display name *
mm_Movie Prediction_20231130182345

Define the display name of the monitoring job

Monitoring interval *
24 hours

How frequently monitoring jobs will run

Monitoring data window hours

The length of the window to pull prediction traffic from. If left blank it will default to the monitoring interval. A short window can be good for endpoints with high prediction traffic, while a long window is useful for endpoints with low prediction traffic.

Notification emails *
joash.muganda@gmail.com

All notifications, including status changes and alert events, are sent via email.

Notification channels

Sampling rate

Sampling rate *
10 %

The percentage of prediction requests (within the monitoring window) to sample. A higher sampling rate will incur more storage and processing charges but may yield more accurate results.

Input schemas (optional)

Deploy to endpoint

- ✓ Define your endpoint
- ✓ Model settings
- ✓ Model monitoring
- 4 Monitoring objectives**

DEPLOY

CANCEL

i Model monitoring applies to **all models** deployed on this endpoint
?

Monitoring objective

- ☒ **Training-serving skew detection**
Training-serving skew occurs when the feature data distribution in production is different from the feature data distribution in model training
- ☐ **Prediction drift detection**
Prediction drift occurs when feature data distribution in production changes significantly over time

Training-serving skew detection

Training data source

To detect training-serving skew, the monitoring job needs to compare the model training data to the dataset used to train the model

- ☐ Cloud Storage bucket
- ☒ **BigQuery table**
- ☐ Vertex AI dataset

BigQuery path *

☒ movie-prediction-406713.movies.movies_score

BROWSE

Search by table name or path using the format: projectId.datasetId.tableId.

Target column

The column name from the training data that the model is trained to predict. This column will be ignored when tracking feature skew.

Target column *

movies_score

Alert thresholds (Optional)

Determines which features to monitor and distance between the input feature distribution and its baseline. At the end of each monitoring run, if any thresholds are crossed you'll receive an alert email. [Learn more](#)

If left blank, then all features are monitored and the alert threshold is .3.

← Movies > Version 1 ▾

[VIEW DATASET](#)

[EXPORT](#)

EVALUATEDEPLOY & TESTBATCH PREDICTVERSION DETAILS

Deploy your model

Endpoints are machine learning models made available for online prediction requests. Endpoints are useful for timely predictions from many users (for example, in response to an application request). You can also request batch predictions if you don't need immediate results.

DEPLOY TO ENDPOINT

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ▾	API	Labels ⓘ	Encryption
Movie Prediction	1817228837923061760	Active	1	—	asia-south1	Disabled	—	—	Nov 30, 2023, 10:55:27 AM	SAMPLE REQUEST		Google-managed

Test your model PREVIEW

Feature column name	Type	Value	Local feature importance
id	Numerical	<input type="text" value="3837"/>	--
name	Text	<input type="text" value="The"/>	--
rating	Text	<input type="text" value="R"/>	--
genre	Text	<input type="text" value="Comedy"/>	--
year	Numerical	<input type="text" value="2000"/>	--
released	Text	<input type="text" value="8/3/2001"/>	--

Predicted column not yet known

Prediction result

--

← Movies > Version 1 ▾

[VIEW DATASET](#)

[EXPORT](#)

EVALUATEDEPLOY & TESTBATCH PREDICTVERSION DETAILS

Test your model PREVIEW

Feature column name	Type	Value	Local feature importance
id	Numerical	<input type="text" value="3837"/>	0
name	Text	<input type="text" value="The"/>	0
rating	Text	<input type="text" value="R"/>	0
genre	Text	<input type="text" value="Comedy"/>	0
year	Numerical	<input type="text" value="2000"/>	0
released	Text	<input type="text" value="8/3/2001"/>	0
director	Text	<input type="text" value="John"/>	0
writer	Text	<input type="text" value="John"/>	0
star	Text	<input type="text" value="Michael"/>	0

Prediction result

Selected label

7 ▾

Baseline prediction value: 0.36101892590522766
Confidence score: 0.3610188961029053

Name	ID	Status	Models	Deployment resource pool	Region	Monitoring	Most recent monitoring job	Most recent alerts	Last updated ▾	API	Labels ⓘ	Encryption
Movie Prediction	3573632692597555200	Active	1	—	asia-south1	Disabled	—	—	Nov 30, 2023, 11:36:16 AM	SAMPLE REQUEST		Google-managed

Test your model PREVIEW

Feature column name	Type	Value	Local feature importance
id	Numerical	<input type="text" value="3837"/>	0
name	Text	<input type="text" value="The"/>	0
rating	Text	<input type="text" value="R"/>	0
genre	Text	<input type="text" value="Comedy"/>	0
year	Numerical	<input type="text" value="2000"/>	0

Prediction result

Selected label

7 ▾

Baseline prediction value: 0.36101892590522766
Confidence score: 0.3610188961029053

Google Cloud

Movie Prediction

Search (/) for resources, docs, products, and more

Search

DASHBOARD

ACTIVITY

RECOMMENDATIONS

CUSTOMIZE

Project info

Project name

Movie Prediction

Project number

603096412774

Project ID

movie-prediction-406713

ADD PEOPLE TO THIS PROJECT

Go to project settings

RPI APIs

Requests (requests/sec)

1.0

0.8

0.6

0.4

0.2

0

No data is available for the selected time frame.

Google Cloud Platform status

All services normal

Go to Cloud status dashboard

Billing

Estimated charges

For the billing period Nov 1 – 30, 2023

USD \$0.00

Take a tour of billing

CLOUD SHELL

Terminal

movie-prediction-406713

Open Editor

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to movie-prediction-406713.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
joash_muganda@cloudshell:~ (movie-prediction-406713): gcloud auth list
Credentialed Accounts

ACTIVE:
ACCOUNT: joash.muganda@gmail.com

To set the active account, run:
\$ gcloud config set account 'ACCOUNT'

joash_muganda@cloudshell:~ (movie-prediction-406713): gcloud config list project
[core]
project = movie-prediction-406713

Your active configuration is: [cloudshell-7260]
joash_muganda@cloudshell:~ (movie-prediction-406713):

Vertex AI

← Movies

TRAIN NEW MODEL

LABS/NEW

Model Garden

Pipelines

NOTEBOOKS

Colab Enterprise

Workbench

GENERATIVE AI STUDIO

Overview

Language

Vision

Speech

DATA

Feature Store

Datasets

Labeling tasks

MODEL DEVELOPMENT

Training

Experiments

Marketplace

SOURCE

ANALYZE

Analyze

Properties

Created

Nov 30, 2023 6:15 AM

Dataset format

BigQuery

Dataset location(s)

big://movie-predict_vies_movies_score (2)

Encryption type

Google-managed

Summary

Total columns: 15

Total rows: -

NUMERIC

4 (26.67%)

STRING

11 (73.33%)

GENERATE STATISTICS

Filter

Enter property name or value

Column name	BigQuery type	BigQuery mode	Missing % (count)	Distinct values
budget	NUMERIC	NULLABLE	-	-
company	STRING	NULLABLE	-	-
country	STRING	NULLABLE	-	-
data_cat	STRING	NULLABLE	-	-
director	STRING	NULLABLE	-	-
genre	STRING	NULLABLE	-	-
id	NUMERIC	NULLABLE	-	-
name	STRING	NULLABLE	-	-

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code. Selecting AutoML on Pipelines will create a Run on Vertex AI Pipelines. Run information will be found on the Runs tab under Pipelines.

TRAIN NEW MODEL

https://console.cloud.google.com/vertex-ai/locations/asia-south-1/datasets/892944179242467328/analyze?project=movie-prediction-406713

Train new model

1 Training method

2 Model details

3 Join Featurestore (optional)

4 Training options

5 Compute and pricing

START TRAINING

CANCEL

Dataset
Movies

Objective *
Classification

Please refer to the pricing guide for more details (and available deployment options) for each method.



You can now run AutoML Tabular training on Vertex AI Pipelines. This provides greater visibility into every step of the training process and a greater level of customization.

[GO TO PIPELINES](#)

[LEARN MORE](#)

Model training method

☒ AutoML

Train high-quality models with minimal effort and machine learning expertise. Just specify how long you want to train. [Learn more](#)

☐ Custom training (advanced)

Run your TensorFlow, scikit-learn, and XGBoost training applications in the cloud. Train with one of Google Cloud's pre-built containers or use your own. [Learn more](#)

CONTINUE

Train new model

1 Training method

2 Model details

3 Join Featurestore (optional)

4 Training options

5 Compute and pricing

START TRAINING CANCEL

Train new model

Creates a new model group and assigns the trained model as version 1

Train new version

Trains model as a version of an existing model

Name *

Movies

Description

Target column *

score (STRING)

Export test dataset to BigQuery

ADVANCED OPTIONS

CONTINUE

Train new model

1 Training method

2 Model details

3 Join Featurestore (optional)

4 Training options

5 Compute and pricing

START TRAINING CANCEL

Before continuing, use the Transformation column to review and specify the data types in your dataset. If unspecified, AutoML will try to apply the most relevant transformation option.

GENERATE STATISTICS

Filter Enter property name or value

<input type="checkbox"/>	Column name ↑	Transformation	BigQuery type	BigQuery mode	Missing % (count)	Distinct values	Correlation w/ target	
<input type="checkbox"/>	budget	Automatic	NUMERIC	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	company	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	country	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	data_cat	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	director	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	genre	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	id	Automatic	NUMERIC	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	name	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	rating	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	released	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	runtime	Automatic	NUMERIC	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	score Target		STRING	NULLABLE	-	-	-	
<input type="checkbox"/>	star	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	writer	Automatic	STRING	NULLABLE	-	-	-	⊖
<input type="checkbox"/>	year	Automatic	NUMERIC	NULLABLE	-	-	-	⊖

Rows per page: 50 1 – 15 of 15

Total 15 feature columns are included in the training

2. Predicting Daily MelbourneTemperatures

Note: I wasn't permitted to use the Iowa Liquor sales dataset. Used the Melbourne temperatures dataset instead.

Training Model:

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 9:19 PM

Dataset format

CSV

Dataset location(s)

gs://me_temps/clea_temperatures.csv

Encryption type

Google-managed

Summary

Total columns: 2

Total rows: 3,650

General statistics generated by Nov 30, 2023 9:29 PM

GENERATE STATISTICS

Filter

Enter property name or value

Column name

Missing % (count)

Distinct values

Date

-

3650

Temperature

-

230

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code. Selecting AutoML on Pipelines will create a Run on Vertex AI Pipelines. Run information will be found on the Runs tab under Pipelines.

TRAIN NEW MODEL

Train new model

Training method

Model details

Join Featurestore (optional)

Training options

5 Compute and pricing

START TRAINING

CANCEL

Enter the maximum number of node hours you want to spend training your model.

You can train for as little as 1 node hour. You may also be eligible to train with free node hours. [Pricing guide](#)

Budget *

1

Maximum node hours

Estimated completion:

Nov 30, 2023 11 PM GMT-8

Enable early stopping

Ends model training when no more improvements can be made and refunds leftover training budget. If early stopping is disabled, training continues until the budget is exhausted.

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 9:19 PM

Dataset format

CSV

Dataset location(s)

gs://me_temps/clea_temperatures.csv

Encryption type

Google-managed

Summary

Total columns: 2

Total rows: 3,650

General statistics generated by Nov 30, 2023 9:29 PM

GENERATE STATISTICS

Filter

Enter property name or value

Column name

Missing % (count)

Distinct values

Date

-

3650

Temperature

-

230

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code. Selecting AutoML on Pipelines will create a Run on Vertex AI Pipelines. Run information will be found on the Runs tab under Pipelines.

me_daily

Training model...

TRAIN NEW MODEL

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 11:13 PM

Dataset format

CSV

Dataset location(s)

gs://me_daily/clea_peratures (1).csv

Encryption type

Google-managed

Summary

Total columns: 3

Total rows: -

Series identifier column

Series_ID

Timestamp column

Date

GENERATE STATISTICS

Filter

Enter property name or value

Column name	Missing % (count)	Distinct values
Daily minimum temperatures in Melbourne, Australia, 1981-1990	-	-
Date	-	-
Series_ID	-	-

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code

TRAIN NEW MODEL

Train new model

Training method

Model details

Training options

Compute and pricing

START TRAINING

CANCEL

Before continuing, use the Transformation column to review and specify the data types in your dataset. If unspecified, AutoML will try to apply the most relevant transformation option.

GENERATE STATISTICS

Filter

Enter property name or value

Column name	Transformation	Feature type	Available at forecast	Missing % (count)	Distinct values
Daily minimum temperatures in Melbourne, Australia, 1981-1990	Numeric	Covariate	Not available	-	-
Date	Timestamp	Covariate	Available	-	-
Series_ID				-	-

Total 2 feature columns are included in the training

ADVANCED OPTIONS

CONTINUE

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 11:18 PM

Dataset format

CSV

Dataset location(s)

gs://me_daily/clea_peratures (1).csv

Encryption type

Google-managed

Summary

Total columns: 3

Total rows: -

Series identifier column

Series_ID

Timestamp column

Date

GENERATE STATISTICS

Filter

Enter property name or value

Column name	Missing % (count)	Distinct values
Daily minimum temperatures in Melbourne, Australia, 1981-1990	-	-
Date	-	-
Series_ID	-	-

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code

me_daily

Training model...

TRAIN NEW MODEL

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 9:19 PM

Dataset format

CSV

Dataset location(s)

gs://me_temps/clea_temperatures.csv

Encryption type

Google-managed

Summary

Total columns: 2

Total rows: 3,650

General statistics generated by Nov 30, 2023 9:29 PM

GENERATE STATISTICS

Filter

Enter property name or value

Column name

Missing % (count)

Distinct values

Date

-

3650

Temperature

-

230

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code. Selecting AutoML on Pipelines will create a Run on Vertex AI Pipelines. Run information will be found on the Runs tab under Pipelines.

TRAIN NEW MODEL

Train new model

Training method

Model details

Join Featurestore (optional)

Training options

5 Compute and pricing

START TRAINING

CANCEL

Enter the maximum number of node hours you want to spend training your model.

You can train for as little as 1 node hour. You may also be eligible to train with free node hours. Pricing guide

Budget *

1

Maximum node hours

Estimated completion: Nov 30, 2023 11 PM GMT-8

Enable early stopping

Ends model training when no more improvements can be made and refunds leftover training budget. If early stopping is disabled, training continues until the budget is exhausted.

me_daily

SOURCEANALYZE

Analyze

Properties

Created

Nov 30, 2023 9:19 PM

Dataset format

CSV

Dataset location(s)

gs://me_temps/clea_temperatures.csv

Encryption type

Google-managed

Summary

Total columns: 2

Total rows: 3,650

General statistics generated by Nov 30, 2023 9:29 PM

GENERATE STATISTICS

Filter

Enter property name or value

Column name

Missing % (count)

Distinct values

Date

-

3650

Temperature

-

230

Related resources

Training jobs and models

Use this dataset and annotation set to train a new machine learning model with AutoML or custom code. Selecting AutoML on Pipelines will create a Run on Vertex AI Pipelines. Run information will be found on the Runs tab under Pipelines.

me_daily

Training model...

TRAIN NEW MODEL

Training

TRAIN NEW MODEL

REFRESH

LEARN

TRAINING PIPELINES

CUSTOM JOBS

HYPERPARAMETER TUNING JOBS

NAS JOBS

Training pipelines are the primary model training workflow in Vertex AI. You can use training pipelines to create an AutoML-trained model or a custom-trained model. For custom-trained models, training pipelines orchestrate custom training jobs and hyperparameter tuning with additional steps like adding a dataset or uploading the model to Vertex AI for prediction serving. [Learn more](#)

Region

us-central1 (Iowa)

Filter

Enter a property name

Name	ID	Status	Job type	Model type	Duration	Last updated	Created	Ended	Labels
me_daily	4019157209354076160	Training	Training pipeline	Tabular forecasting	1 min 34 sec	Dec 1, 2023, 12:49:09 AM	Dec 1, 2023, 12:49:08 AM	—	—

Trained Mode:

Training

TRAIN NEW MODEL

REFRESH

LEARN

TRAINING PIPELINES

CUSTOM JOBS

HYPERPARAMETER TUNING JOBS

NAS JOBS

Training pipelines are the primary model training workflow in Vertex AI. You can use training pipelines to create an AutoML-trained model or a custom-trained model. For custom-trained models, training pipelines orchestrate custom training jobs and hyperparameter tuning with additional steps like adding a dataset or uploading the model to Vertex AI for prediction serving. [Learn more](#)

Region

us-central1 (Iowa)

Filter

Enter a property name

Name	ID	Status	Job type	Model type	Duration	Last updated	Created	Ended	Labels
me_daily	4831775467117740032	Finished	Training pipeline	Tabular forecasting	1 hr 35 min	Dec 1, 2023, 3:19:03 AM	Dec 1, 2023, 1:43:26 AM	Dec 1, 2023, 3:19:03 AM	—

me_daily

Version 1

VIEW DATASET

EVALUATE

DEPLOY & TEST

BATCH PREDICT

VERSION DETAILS

untitled_8549561436799444835

COMPARE

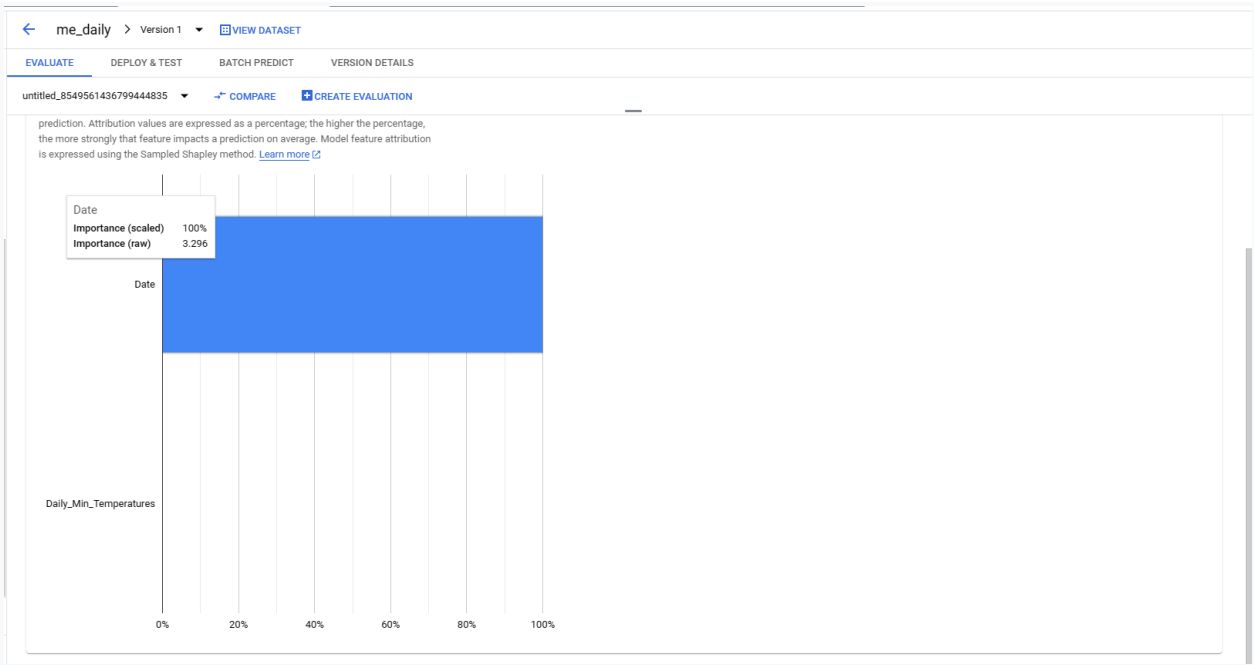
CREATE EVALUATION

Target column	MAE	MAPE	RMSE	RMSLE	r ²
Daily_Min_Temperatures <small>numeric</small>	1.995	20.364	2.594	0.229	0.556

Feature importance

Model feature attribution tells you how important each feature is when making a prediction. Attribution values are expressed as a percentage; the higher the percentage, the more strongly that feature impacts a prediction on average. Model feature attribution is expressed using the Sampled Shapley method. [Learn more](#)

Date



Training

TRAIN NEW MODEL

REFRESH

LEARN

TRAINING PIPELINES

CUSTOM JOBS

HYPERPARAMETER TUNING JOBS

NAS JOBS

Training pipelines are the primary model training workflow in Vertex AI. You can use training pipelines to create an AutoML-trained model or a custom-trained model. For custom-trained models, training pipelines orchestrate custom training jobs and hyperparameter tuning with additional steps like adding a dataset or uploading the model to Vertex AI for prediction serving. [Learn more](#)

Region

us-central1 (Iowa)

Filter

Enter a property name

?

≡

Name	ID	Status	Job type	Model type	Duration ?	Last updated ↓	Created	Ended	Labels
me_daily	4831775467117740032	Finished	Training pipeline	Tabular forecasting	1 hr 35 min	Dec 1, 2023, 3:19:03 AM	Dec 1, 2023, 1:43:26 AM	Dec 1, 2023, 3:19:03 AM	— <div>⋮</div>

← me_daily

> Version 1

VIEW DATASET

EVALUATE

DEPLOY & TEST

BATCH PREDICT

VERSION DETAILS

untitled_8549561436799444835

COMPARE

CREATE EVALUATION

Target column

Daily_Min_Temperatures

numeric

MAE ?

1.995

MAPE ?

20.364

RMSE ?

2.594

RMSLE ?

0.229

r² ?

0.556

Feature importance

Model feature attribution tells you how important each feature is when making a prediction. Attribution values are expressed as a percentage; the higher the percentage, the more strongly that feature impacts a prediction on average. Model feature attribution is expressed using the Sampled Shapley method. [Learn more](#)

Date

Deployment Failed:

