

# Introduction to Vertex AI (formerly AutoML)

<https://cloud.google.com/vertex-ai/docs/start/introduction-unified-platform>

Vertex AI brings AutoML and AI Platform together into a unified API, client library, and user interface. AutoML allows you to train models on image, tabular, text, and video datasets without writing code, while training in AI Platform lets you run custom training code. With Vertex AI, both AutoML training and *custom training* are available options. Whichever option you choose for training, you can save models, deploy models and request predictions with Vertex AI.

You can use Vertex AI to manage the following stages in the ML workflow:

- Create a dataset and upload data.
- Train an ML model on your data:
  - Train the model
  - Evaluate model accuracy
  - Tune hyperparameters (custom training only)
- Upload and store your model in Vertex AI.
- Deploy your trained model to an endpoint for serving predictions.
- Send prediction requests to your endpoint.
- Specify a prediction traffic split in your endpoint.
- Manage your models and endpoints.

**Step 1:** .csv upload. It's also possible to access Vertex via API.

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SOURCE

ANALYZE

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 data source

☐ 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.

btc-usd\_2014-2021\_train.csv

1 file

×

SELECT FILES

Select a Cloud Storage path

Choose where your uploaded CSV files will be stored (charges apply)

Cloud Storage path

☒ gs:// cloud-ai-platform-21eff843-1a6d-45a1-9fbe-d2c46e9ed9e2

BROWSE

?

What happens next?

The CSV file data will be uploaded to Cloud Storage and associated with your dataset. Making changes to the referenced CSV files will affect the dataset before training.

CONTINUE

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SOURCE

ANALYZE

Dataset Info

Created: Sep 03, 2021 8:40 PM  
Dataset format: CSV  
Dataset location: [gs://cloud-ai-plat\\_14-2021\\_train.csv](#)

Summary

Total columns: 30  
Total rows: -

Series identifier column

Timestamp column

GENERATING STATISTICS...

Filter

Enter property name or value

Column name	Missing % (count)	Distinct values
Adj Close	-	-
Close	-	-
daily_return	-	-
Date	-	-
EMA Entry/Exit 50.200	-	-
EMA Entry/Exit 8.20	-	-
EMA Signal 50.200	-	-
EMA Signal 8.20	-	-
ema_window_1	-	-

## Step 2: All data uploaded and visualization options

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SOURCE

ANALYZE

General statistics generated by Sep 04, 2021 1:27 PM

Filter

Enter property name or value

Column name	Missing % (count)	Distinct values
adj_close	-	2532
close	-	2532
daily_return	-	2535
Date	-	2528
ema_entry_exit_50_200	-	4
ema_entry_exit_8_20	-	4
ema_signal_50_200	-	2
ema_signal_8_20	-	2
ema_window_1	-	2535
ema_window_10	-	2535
ema_window_15	-	2535
ema_window_2	-	2535
ema_window_20	-	2535
ema_window_200	-	2535
ema_window_24	-	2535
ema_window_3	-	2535
ema_window_4	-	2535
ema_window_5	-	2535
ema_window_50	-	2535
ema_window_6	-	2535
ema_window_7	-	2535
ema_window_8	-	2535

daily\_return

Column name: daily\_return

Missing % (count): -

Distinct values: 2535

Mean: 0.003

Standard Deviation: 0.039

Most common value (%): 9.052022711306894e-05(2.5%)

DONE

Step 3: Training the model

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SOURCEANALYZE

General statistics generated by Sep 04, 2021 1:27 PMGENERATE STATISTICS

FilterEnter property name or value

Column name	Missing % (count)	Distinct values
adj_close	-	2532
close	-	2532
daily_return	-	2535
Date	-	2528

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

1Training method

2Model details

3Training options

4Compute and pricing

START TRAINING

CANCEL

Dataset

Project-2-Algo-Tradegator

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

Custom training with a managed dataset is not currently available. Learn more about custom model training

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

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START TRAINING

CANCEL

periods start from the most recent timestamp in the dataset.

Context window \*

30

Defines the input lags to the model for each time series. For most use cases, the context window is between 0-5 times the forecast horizon value. For a starting point, try setting the context window equal to the forecast horizon value. Learn more

Export test dataset to BigQuery

Data validation options

AutoML Forecast can perform multiple validations on your dataset to ensure the best model quality

Cancel training

If data validation fails, then model training will be canceled

Ignore validation

Bypass the data validations

Data split

Chronological

The dataset is sorted by timestamp. The earliest 80% of rows are assigned to training, the next 10% to validation and the most recent 10% to test. Learn more

Training 80%

Validation 10%

Testing 10%

Start time

End time

Manual

You assign each data row for training, validation, and testing. Learn more

SHOW LESS

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Compute and pricing

START TRAINING CANCEL

Column name

Transformation

Feature type

Available at forecast

Missing % (count)

adj\_close

Timestamp column

close

daily\_return

Date

Series Identifier

ema\_entry\_exit\_50\_200

ema\_entry\_exit\_8\_20

ema\_signal\_50\_200

ema\_signal\_8\_20

ema\_window\_1

ema\_window\_10

ema\_window\_15

ema\_window\_2

ema\_window\_20

ema\_window\_200

ema\_window\_24

ema\_window\_3

ema\_window\_4

ema\_window\_5

ema\_window\_50

ema\_window\_6

ema\_window\_7

ema\_window\_8

high

low

open

positive\_return

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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 \* 2 Maximum node hours ?

Estimated completion date: Sep 4, 2021 5 PM GMT+10

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SOURCE ANALYZE

General statistics generated by Sep 04, 2021 1:27 PM GENERATE STATISTICS

Filter Enter property name or value

Column name

Missing % (count)

Distinct values

adj\_close

close

daily\_return

Date

ema\_entry\_exit\_50\_200

ema\_entry\_exit\_8\_20

ema\_signal\_50\_200

ema\_signal\_8\_20

ema\_window\_1

ema\_window\_10

ema\_window\_15

ema\_window\_2

Training jobs and models

Project-2-Algo-Tradegator\_ML\_1 Training model...

TRAIN NEW MODEL

**Step 4: Model trained** - (takes some time)

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VIEW DATASET

EVALUATE

BATCH PREDICTIONS

MODEL PROPERTIES

This model finished training on Sep 4, 2021, 5:58:59 PM.

Status	Succeeded
Model ID	4974428098570223616
Created	Sep 4, 2021, 4:10:28 PM
Budget (original)	2 node hours
Training time	1 hr 48 min
Region	us-central1
Encryption type	Google-managed key

Dataset	<a href="#">Project-2-Algo-Tradegator</a>
Dataset ID	8381225294815559680
Target column	positive_return
Series identifier column	rownum
Timestamp column	date
Context Window ?	30 days
Forecast horizon ends	After 30 days
Data split	Chronologically assigned
Model hyperparameters	<a href="#">Model</a> <a href="#">Trials</a>
Column metadata	VIEW DETAILS

Algorithm	AutoML
Objective	Forecasting
Optimized for	RMSE

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VIEW DATASET

EVALUATE

BATCH PREDICTIONS

MODEL PROPERTIES

Batch predictions

Batch prediction intakes a group of prediction requests and outputs the results to a specified location. Use batch prediction when you don't require an immediate response and want to process accumulated data with a single request. Batch prediction can be used with [AutoML models](#) and [custom-trained models](#).

CREATE BATCH PREDICTION

Filter Enter a property name

	Name	Last updated ↓	Status	
✓	Project-2-Algo-Tradegator_ML_1-Pred_1	September 4, 2021	Done	⋮

