

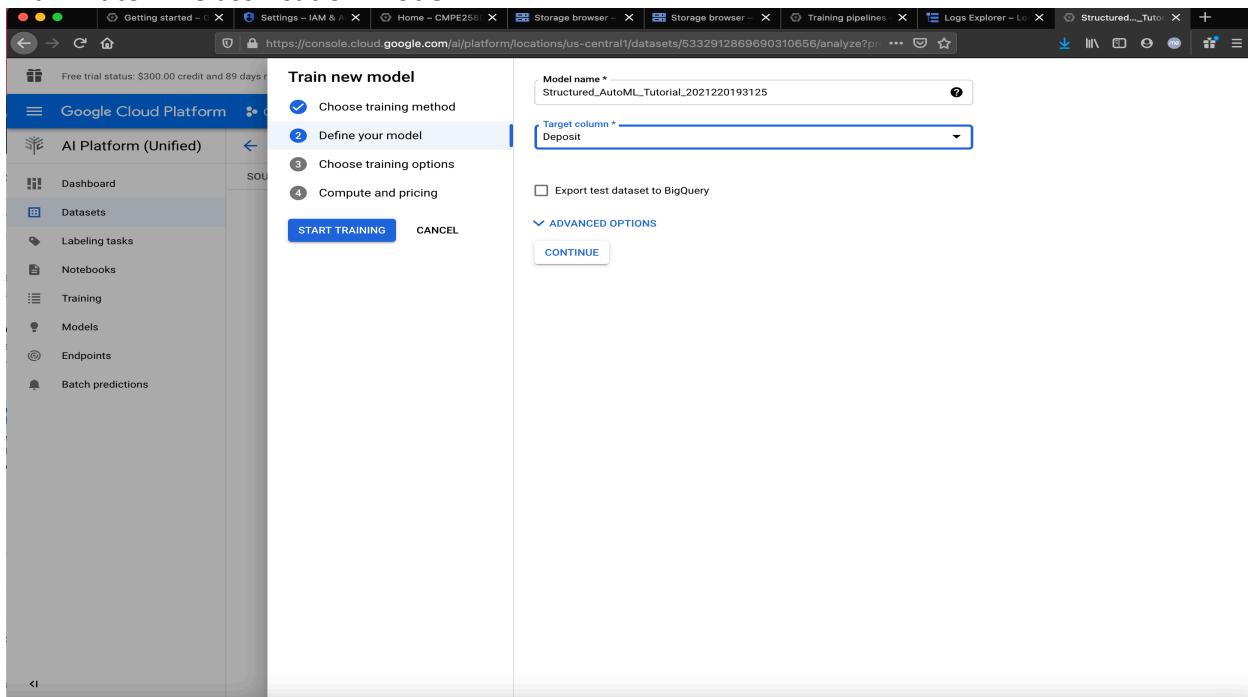
AI Platform: Tabular Data Classification

Creation of Tabular dataset

The screenshot shows the 'Create dataset' page in the Google Cloud Platform AI Platform (Unified) interface. The left sidebar shows navigation options like Dashboard, Datasets, Labeling tasks, Notebooks, Training, Models, Endpoints, and Batch predictions. The main area is titled 'Create dataset' and has a 'Dataset name' input field containing 'Structured_AutoML_Tutorial'. Below it, a section titled 'Select a data type and objective' shows tabs for IMAGE, TABULAR (which is selected), TEXT, and VIDEO. A preview image shows a scatter plot with green and yellow dots. A radio button for 'Regression/classification' is selected, with a note: 'Predict a target column's value. Supports tables with hundreds of columns and millions of rows.' A 'Region' dropdown is set to 'us-central1 (Iowa)'. At the bottom are 'CREATE' and 'CANCEL' buttons.

The screenshot shows the 'Structured_AutoML_Tutorial' dataset details page. The left sidebar is identical to the previous screen. The main area shows the 'ANALYZE' tab under 'SOURCE' with the URL 'dataset location: gs://cloud-m.../bank_marketing.csv'. Below this is a table of general statistics: 'General statistics generated by Feb 20, 2021 11:30 AM' and a 'GENERATE STATISTICS' button. The table lists fields: Age, Balance, Campaign, Contact, Day, Default, Deposit, Duration, Education, Housing, Job, Loan, MaritalStatus, Month, PDays, POOutcome, and Previous, along with their missing percentage and distinct values. To the right, a 'Training jobs and models' section says 'Use this dataset to train a new machine learning model with AutoML or custom code' and has a 'TRAIN NEW MODEL' button.

Train AutoML Classification Model



The screenshot shows the 'Structured_AutoML_Tutorial' dataset page on the Google Cloud Platform. The left sidebar shows 'Datasets' is selected. The main area displays the dataset statistics and a table of field details:

SOURCE: ANALYZE
dataset location: gs://cloud-ml-datasets/bank-marketing.csv

General statistics generated by Feb 20, 2021 11:30 AM GENERATE STATISTICS

Field Name	Missing % (count)	Distinct values
Age	-	77
Balance	-	7168
Campaign	-	48
Contact	-	3
Day	-	31
Default	-	2
Deposit	-	2
Duration	-	1573
Education	-	4
Housing	-	2
Job	-	12
Loan	-	2
MaritalStatus	-	3
Month	-	12
PDays	-	559
POutcome	-	
Previous	-	

Message: Started training 'Structured_AutoML_Tutorial_2021220193125'. You will be emailed when training completes.

Buttons: TRAIN NEW MODEL, DISMISS, ACTIVATE.

Deploy the model to an endpoint

Feature column name	Type	Required or optional	Value	Local feature importance
Age	Text	Required	38.000000	0
Balance	Text	Required	389.000000	0
Campaign	Text	Required	2.000000	0
Contact	Text	Required	cellular	0
Day	Text	Required	15.000000	0
Default	Text	Required	no	0
Duration	Text	Required	165.000000	0
Education	Text	Required	secondary	0
Housing	Text	Required	yes	0

Endpoints – AI Platform (Unified) | console.cloud.google.com

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AI Platform (Unified) Endpoints PREVIEW CREATE ENDPOINT REFRESH

Dashboard Datasets Labeling tasks Notebooks Training Models Endpoints Batch predictions

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.

To create an endpoint, you need at least one machine learning model.

Region: us-central1 (Iowa)

Filter endpoints

Endpoint	ID	Models	Region	Last updated	API	Notification	Metadata
Structured_AutoML_Tutorial	7793303233304199168	1	us-central1	Feb 20, 2021, 7:58:43 PM	Sample request		
hello_custom	7868738527062654976	1	us-central1	Feb 20, 2021, 7:23:20 PM	Sample request		
hello_automl_text	3257052508635267072	1	us-central1	Feb 20, 2021, 5:54:00 PM	Sample request		

Structured_AutoML_Tutorial | console.cloud.google.com

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AI Platform (Unified) Structured_AutoML_Tutorial EDIT SETTINGS SAMPLE REQUEST

Dashboard Datasets Labeling tasks Notebooks Training Models Endpoints Batch predictions

Region: us-central1

Logs View Logs

Model	Traffic split	Compute nodes	Type	Created
Structured_AutoML_Tutorial_202120193125	100%	Manual	Tabular	Feb 20, 2021, 7:52:32 PM

DEPLOY ANOTHER MODEL

Chart interval: 1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days

Predictions/second

No data is available for the selected time frame.

Prediction error percentage

No data is available for the selected time frame.

Structured_AutoML_Tutorial_2

console.cloud.google.com/a/platform/locations/us-central1/models/9132473211563278336/evaluate?authuser=1&project=cmpe258dl

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EVALUATE DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

All labels 0 Confidence threshold 0.5

Filter labels

All labels

	PR AUC	ROC AUC	Log loss	F1 score	Precision	Recall	Created
1	0.99157	0.976	0.191	0.9106783	91.1%	91.1%	Feb 20, 2021, 12:41:05 PM
2	0.61577						

Use the slider to see which confidence threshold works best for your model on the precision-recall tradeoff curve. [Learn more about these metrics and graphs](#)

Precision vs Recall: A blue curve starts at (0,0) and ends at (1,1). A red dot marks the point (0.99157, 0.976).

True positive rate vs False positive rate: A blue curve starts at (0,0) and ends at (1,1). A red dot marks the point (0.99157, 0.976).

Precision vs Confidence threshold: A blue curve starts at (0,1) and ends at (1,0). A red curve starts at (0,1) and ends at (1,0). A red dot marks the intersection point at approximately (0.5, 0.99157).

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). Note that this table is limited to the 10 most confused labels. You can download the entire confusion matrix as a CSV file.

True label \ Predicted label	1	2
1	97%	3%
2	51%	49%

Structured_AutoML_Tutorial_2

console.cloud.google.com/a/platform/locations/us-central1/models/9132473211563278336/evaluate?authuser=1&project=cmpe258dl

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Google Cloud Platform CMPE258DL

EVALUATE DEPLOY & TEST BATCH PREDICTIONS MODEL PROPERTIES

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Filter labels

Confusion matrix

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Feature Importance

Feature	Importance
Duration	High
Month	Medium
Contact	Low
Housing	Low
Day	Low

Deploy and Test

The screenshot shows the Google Cloud Platform AI Platform (Unified) interface. The left sidebar is collapsed. The main area shows a deployed model named "Structured_AutoML_Tutorial_202120193125". The "DEPLOY & TEST" tab is selected. Below it, there are nine input fields for different features: Balance (Text, Required, value: 389.000000), Campaign (Text, Required, value: 2.000000), Contact (Text, Required, value: cellular), Day (Text, Required, value: 15.000000), Default (Text, Required, value: no), Duration (Text, Required, value: 165.000000), Education (Text, Required, value: secondary), Housing (Text, Required, value: yes), and Job (Text, Required, value: blue-collar). To the right, a "Prediction result" section shows a single row with a value of "--". At the bottom, there are "PREDICT" and "RESET" buttons.

Remove End Point

The screenshot shows the Google Cloud Platform AI Platform (Unified) interface. The left sidebar is collapsed. The main area shows the "Endpoints" section. A modal dialog titled "Remove endpoint" is open, asking if you want to remove the endpoint "Structured_AutoML_Tutorial?". The modal has "CANCEL" and "CONFIRM" buttons. In the background, a table lists endpoints: "hello_custom" (ID: 78687385, status: created, API: Sample request, Notification: Sample request, Metadata: Sample request) and "Structured_AutoML_Tutorial" (ID: 77933032, status: created, API: Sample request, Notification: Sample request, Metadata: Sample request).

Delete Model

The screenshot shows the Google Cloud Platform interface for the AI Platform (Unified). The left sidebar has 'Models' selected. The main area displays a list of models in the 'us-central1 (Iowa)' region. A modal dialog box is open, titled 'Delete model', containing a warning message about the permanence of deletion. At the bottom of the dialog are 'CANCEL' and 'DELETE' buttons.

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Search products and resources

AI Platform (Unified)

Models PREVIEW + CREATE IMPORT REFRESH

Region: us-central1 (Iowa)

Filter models... Name

Structured_AutoML_Tutorial_2021220193125 (checked)
hello_custom (checked)
automl_text_classification_model1 (checked)

Delete model

Your model and its evaluations will be removed from your Google Cloud project. This may affect any active endpoints using this model. Delete model 'Structured_AutoML_Tutorial_2021220193125'

CANCEL DELETE

Type	Created	Notifications	Metadata
Tabular	Feb 20, 2021, 11:34:19 AM
Custom trained	Feb 20, 2021, 12:24:06 PM
Text classification	Feb 18, 2021, 3:36:25 PM