

IBM Data & AI

Auto AI



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Exercise 1: Create a machine learning model using Auto AI

Use Case

Goal: Approach:

Identify who has high probability to cancel the contract (Churn) to help marketing team to create a list of customer targets to receive specific marketing campaign

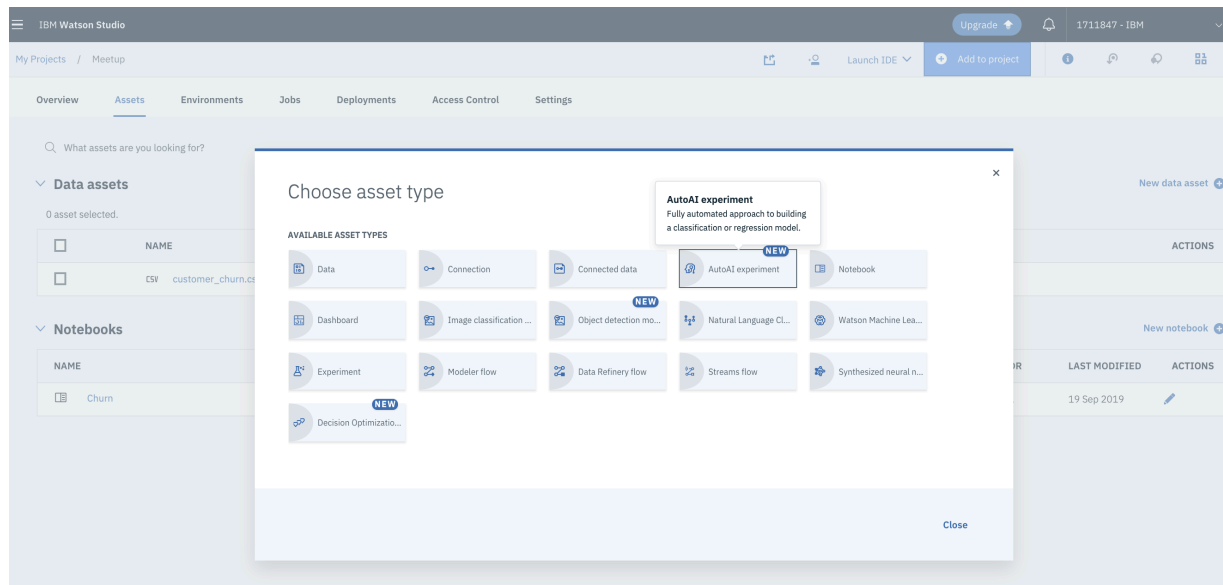
- Automatically generate a model to identify who has cancel
- Review results

Why?

To save marketing cost and reduce the customer churn, identify those likely to churn and focus marketing efforts on those customers.

Auto AI

1. Add the AutoAI experiment to the project. Click on **+ Add to project**.
2. Click on **AutoAI**.



3. Type the **Asset name** and use the option **“From blank”**.

IBM Watson Studio

Create an AutoAI experiment

Define AutoAI experiment details

Create AutoAI experiment type

☒ From blank
 ☐ From sample

Asset name *

Name of AutoAI experiment

Description

Description of AutoAI experiment

Associated services

Machine Learning Service

No Machine Learning service instances associated with your project.

[Associate a Machine Learning service instance](#) with your project on the project settings page, then click the reload button below to refresh the instances available for association with your new model builder instance.

Reload

Compute configuration * i

8 vCPU and 32 GB RAM

This compute configuration consumes **20 capacity units per hour**. [Learn more](#) about capacity unit hours and Watson Machine Learning pricing plans.

- Click on “[Associate a Machine Learning service instance](#)” to select the machine learning service instance. Click **Select**.

Machine Learning

Existing New

RESOURCE GROUP

All Resources ▾

LOCATION

All Locations ▾

CLOUD FOUNDRY ORG

None ▾

Existing Service Instance

Aprendizagem de Máquina-RCI ▾

Select Cancel

- Click in **Create**

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Create an AutoAI experiment

Define AutoAI experiment details

Create AutoAI experiment type

☒ From blank
 ☐ From sample

Asset name *

Model1

Description

Description of AutoAI experiment

Associated services

Watson Machine Learning Service Instance *

Aprendizagem de Máquina-RCI ▾

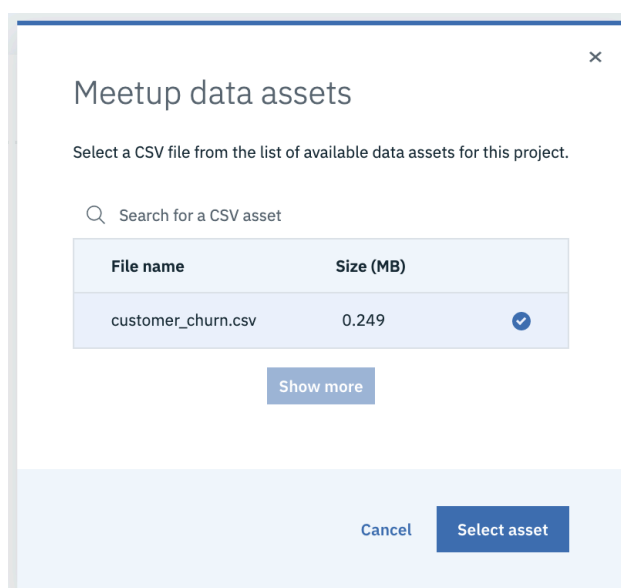
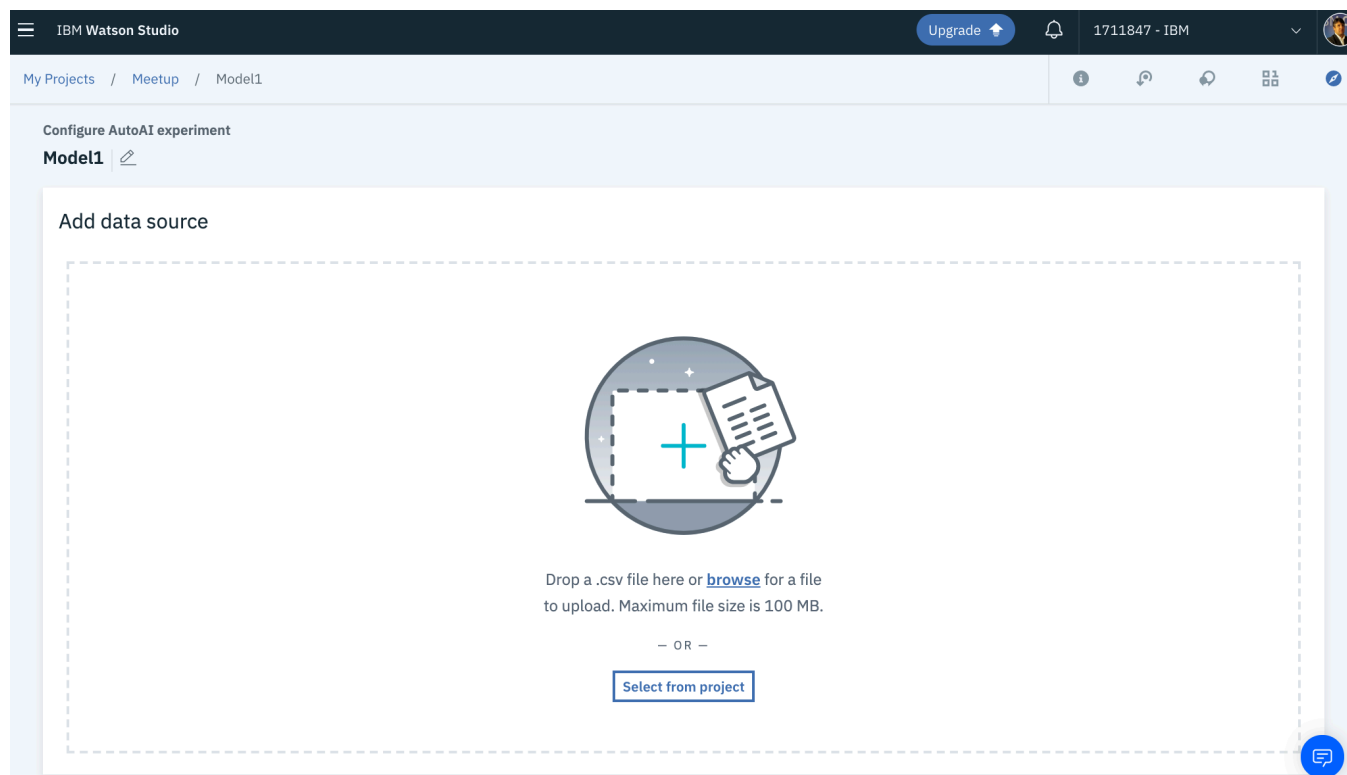
Compute configuration * ⓘ

8 vCPU and 32 GB RAM

This compute configuration consumes 20 capacity units per hour. [Learn more](#) about capacity unit hours and Watson Machine Learning pricing plans.

Cancel Create

- Click on **Select from project** to select the **customer_churn.csv** file already load in the project. Click **Select asset**.



7. Select the CHURN column, on Select column to predict and click **Run experiment**.

Configure AutoAI experiment

Model1

Add data source

Drop a .csv file here or [browse](#) for a file to upload. Maximum file size is 100 MB.

— OR —

[Select from project](#)

Data source	SIZE (MB)	COLUMNS
customer_churn.csv	0.249	17

Select column to predict

DATA SOURCE: customer_churn.csv

Column name	Type
CHURN	String
Gender	String
Status	String
Children	Integer
Est Income	Decimal
Car Owner	String

Selected prediction

PREDICTION TYPE: **Binary Classification**

POSITIVE CLASS: **T**

OPTIMIZED METRIC: **ROC AUC**

[Experiment settings](#) [Run experiment](#)

8. Choose the best model and click on **Save as model**.

t: 4 minutes

Read dataset Split holdout data Read training data Preprocessing Model selection LGBM classifier Hyperparameter optimization P1 Feature engineering P2 Hyperparameter optimization P3 P4

Pipeline leaderboard

Compare pipelines Ranking based on: **Accuracy**

RANK	PIPELINE	ACCURACY	ESTIMATOR	ENHANCEMENTS	
1	Pipeline 3	0.982	LGBM classifier	HPO FE	Save as model
2	Pipeline 4	0.982	LGBM classifier	HPO FE HPO + FE	Save as model
3	Pipeline 1	0.980	LGBM classifier	None	Save as model
4	Pipeline 2	0.980	LGBM classifier	HPO	Save as model