Network Intrusion Detection Project Steps:

Projects / Network Detection / Network_Detection_ML

Experiment summary | Pipeline comparison

★ **Rank by:** Accuracy (Optimized) | Cross validation score

Relationship map ⓘ
Prediction column: class

Train_data.csv

Progress map
Swap view ⇄

○┄┄○┄┄○┄○┄┄○┄┄○

Pending

TRAIN_DATA.CSV

Starting the AutoAI experiment

Time elapsed: 3 seconds

View log   Save code

Pipeline leaderboard ▽

Rank	↑	Name	Algorithm	Accuracy (Optimized) Cross Validation	Enhancements	Build time

● ● ●

Projects / Network Detection / Network_Detection_ML

Experiment summary | Pipeline comparison

★ **Rank by:** Accuracy (Optimized) | Cross validation score

SELECTING ALGORITHMS

10%
of training data
Train_data.csv

Model selection

TRAIN_DATA.CSV

Selecting algorithms for pipeline generation using 10% of training data. Discarding underperforming algorithms and keeping the top 2 algorithms.
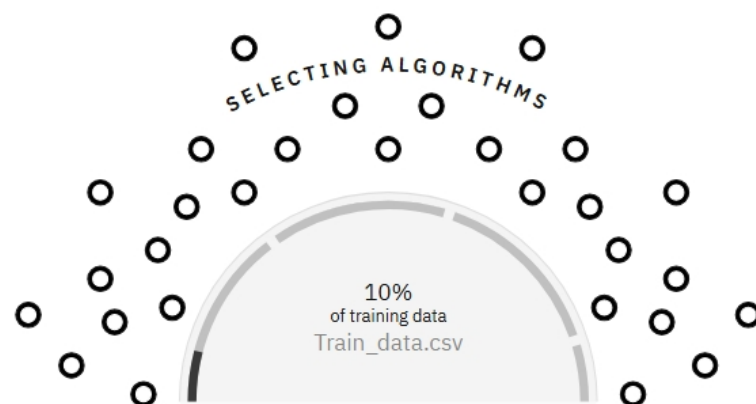
Time elapsed: 67 seconds

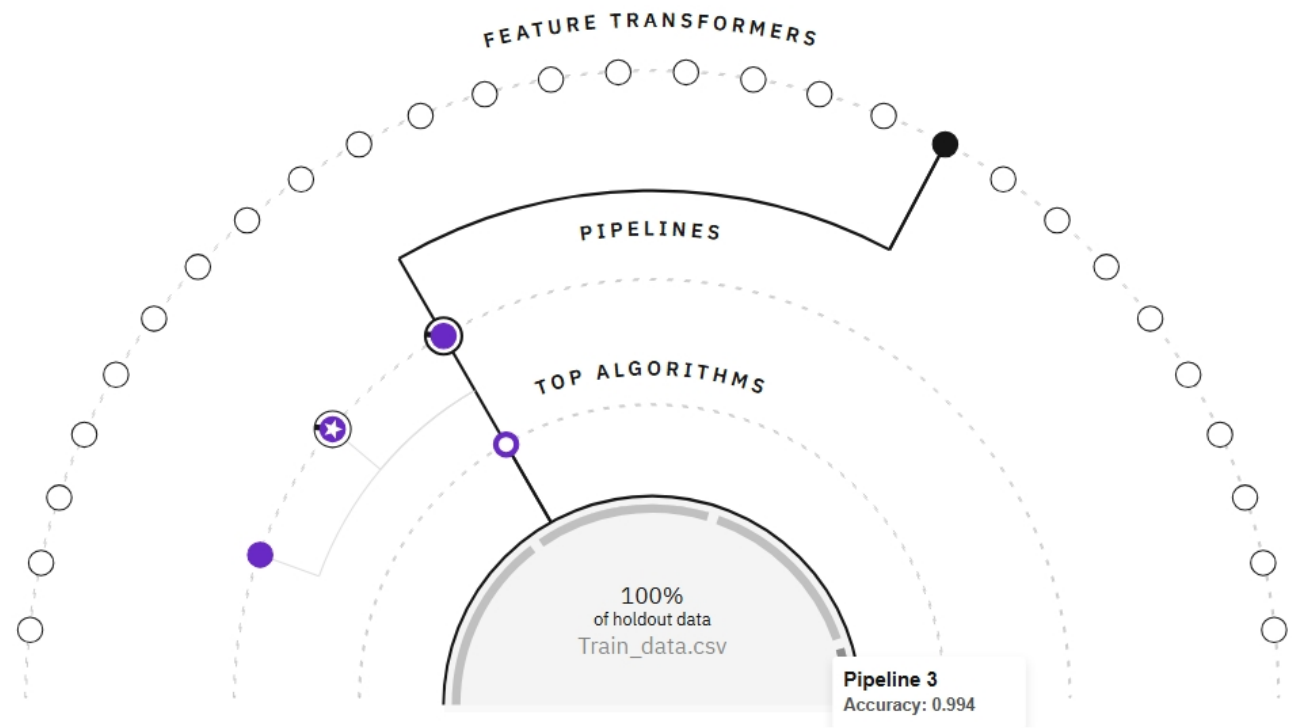View log | Save code

Pipeline leaderboard

Rank	Name	Algorithm	Accuracy (Optimized) ↑ Cross Validation	Enhancements	Build time

● ● ●

Search in your workspaces

Upgrade

ANJALI JHA's Account ∨

London ∨

AJ

Experiment summary | Pipeline comparison

★ **Rank by:** Accuracy (Optimized) | Cross validation score

Relationship map ⓘ

Prediction column: class

FEATURE TRANSFORMERS

PIPELINES

TOP ALGORITHMS

100%
of holdout data
Train_data.csv

Pipeline 3
Accuracy: 0.994

Progress map

Swap view ⇄

Evaluating pipeline

SNAP DECISION TREE CLASSIFIER

Testing holdout data and ranking pipeline based on optimized metric.

Time elapsed: 2 minutes

View log | Save code

Pipeline leaderboard ▽

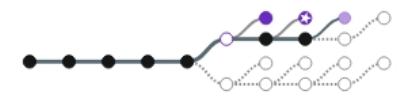| Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation ↑	Enhancements	Build time
2	**Pipeline 1**	○ Snap Decision Tree Classifier	0.995	*None*	00:00:07

Projects / Network Detection / Network_Detection_ML   🖫 ▤ ⚙ ▶ ⓘ ⧖ ⟳ ▭ ⦚

Experiment summary | Pipeline comparison   ☰   ★ **Rank by:** Accuracy (Optimized) | Cross validation score ⇌

Relationship map ⓘ
Prediction column: class

FEATURE TRANSFORMERS

PIPELINES

TOP ALGORITHMS

Train_data.csv

Progress map

Swap view ⇄

Experiment completed ✓

8 PIPELINES GENERATED

8 pipelines generated from algorithms. See pipeline leaderboard below for more detail.
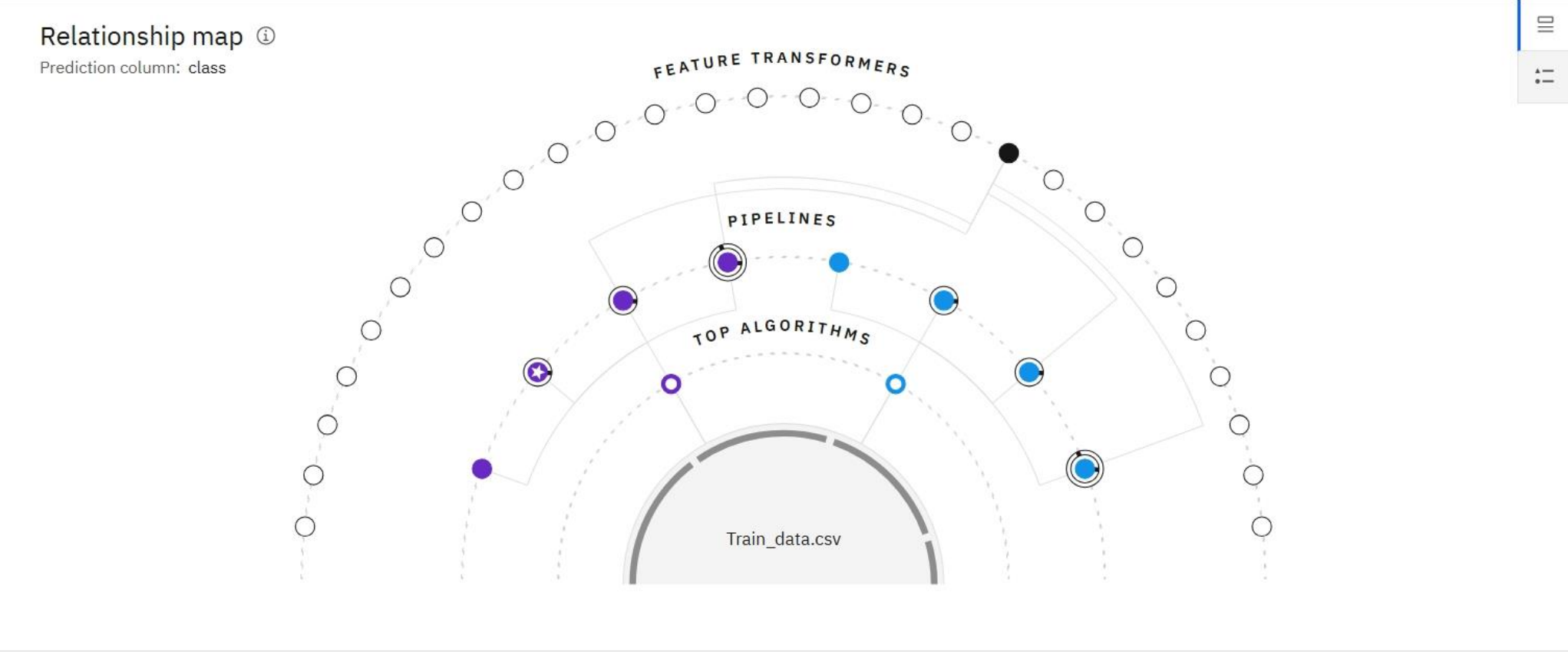
Time elapsed: 3 minutes

View log   Save code

Pipeline leaderboard ▽

Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation ↑	Enhancements	Build time
8	**Pipeline 7**	ⵔ Decision Tree Classifier	0.993	HPO-1 FE	00:00:48

Projects / Network Detection / Network_Detection_ML

Experiment summary | Pipeline comparison

★ **Rank by:** Accuracy (Optimized) | Cross validation score

Progress map ⓘ

Prediction column: class

Read dataset — Split holdout data — Read training data — Preprocessing — Model selection

Snap Decision Tree Classifier — Hyperparameter optimization — Feature engineering — Hyperparameter optimization

P1 — P2 — P3 — P4

Decision Tree Classifier — Hyperparameter optimization — Feature engineering — Hyperparameter optimization

P5 — P6 — P7 — P8

Relationship map

Swap view ⇄

Experiment completed ✓

8 PIPELINES GENERATED

8 pipelines generated from algorithms. See pipeline leaderboard below for more detail.
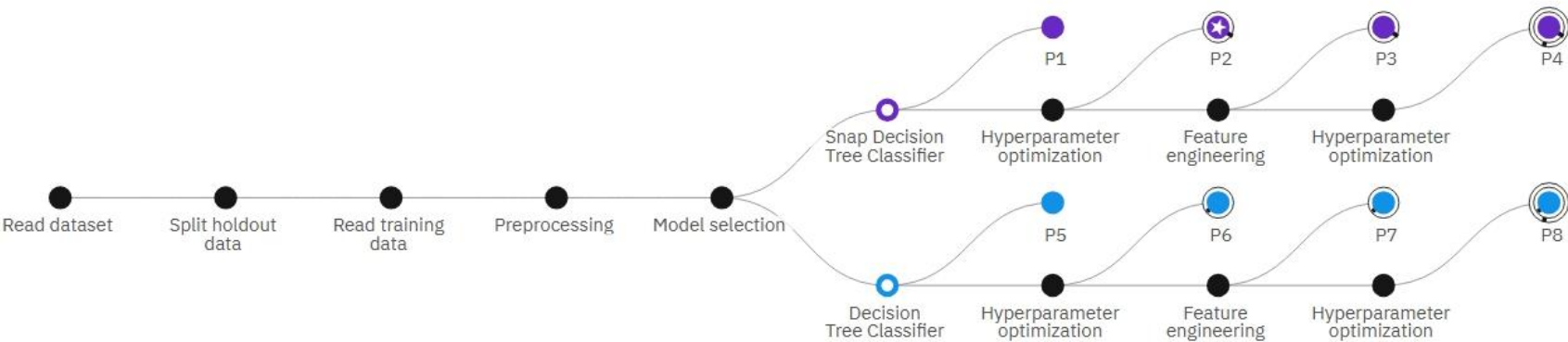
Time elapsed: 3 minutes

View log | Save code

Pipeline leaderboard ▽

Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation ↑	Enhancements	Build time
8	**Pipeline 7**	⊙ Decision Tree Classifier	0.993	HPO-1 FE	00:00:48

Projects / Network Detection / Network_Detection_ML

Experiment summary | Pipeline comparison

★ **Rank by:** Accuracy (Optimized) | Cross validation score

TOP ALGORITHMS

Train_data.csv

Experiment completed ●

8 PIPELINES GENERATED

8 pipelines generated from algorithms. See pipeline leaderboard below for more detail.

Time elapsed: 3 minutes

View log   Save code

Pipeline leaderboard ▽

	Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation ↑	Enhancements	Build time
	4	**Pipeline 5**	○ Decision Tree Classifier	0.994	*None*	00:00:04
	3	**Pipeline 6**	○ Decision Tree Classifier	0.994	HPO-1	00:00:09
	2	**Pipeline 1**	○ Snap Decision Tree Classifier	0.995	*None*	00:00:07
★	1	**Pipeline 2**	○ Snap Decision Tree Classifier	0.995	HPO-1	00:00:12

Experir⟩

Save as

Select asset type

Model ✓

Create a watsonx.ai Runtime model asset that you can test with new data, deploy to generate predictions, and trace lineage activity.

Notebook

Create a notebook if you want to view the code that created this model pipeline or interact with with the model programatically.

Define details

Name

P2 - Snap Decision Tree Classifier: Network_Detection_ML

Description (optional)

Model description

Tags

Add tags to make assets easier to find.

Add a tag ⊕

Cancel   Create

Projects / Network Detection / Network_Detection_ML

Experiment summary | Pipeline comparison

★ Rank by:

Read dataset — Split holdout data — Read training data — Preprocessing — Model selection

Snap Decision Tree Classifier — Hyperparameter optimization — Feature engineering — Hyperparameter optimization

P5 — P6 — P7 — P8

Decision Tree Classifier — Hyperparameter optimization — Feature engineering — Hyperparameter optimization

✓ **Saved Model successfully.** ✕
P2 - Snap Decision Tree Classifier:
Network_Detection_ML was
successfully saved to Network
Detection.

View in project

Time elapsed: 3 minutes

View log | Save code

Pipeline leaderboard ▽

	Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation ↑	Enhancements	Build time
	4	**Pipeline 5**	○ Decision Tree Classifier	0.994	*None*	00:00:04
	3	**Pipeline 6**	○ Decision Tree Classifier	0.994	HPO-1	00:00:09
	2	**Pipeline 1**	○ Snap Decision Tree Classifier	0.995	*None*	00:00:07
★	1	**Pipeline 2**	○ Snap Decision Tree Classifier	0.995	HPO-1	00:00:12

Projects / **Network Detection** / P2 - Snap Decision Tree Classifier: Network_Detection_ML

Input (1)

Column ↑	Type
count	double
diff_srv_rate	double
dst_bytes	double
dst_host_count	double
dst_host_diff_srv_rate	double
dst_host_rerror_rate	double
dst_host_same_src_port_rate	double
dst_host_same_srv_rate	double

About this asset

✕

Name

P2 - Snap Decision Tree Classifier:
Network_Detection_ML

Description

No description provided.

Asset Details

Type: wml-hybrid_0.1

Model ID: f278cb2b-7c4c-40...

Software specification:
hybrid_0.1 ⚙

Hybrid pipeline software specifications:
autoai-kb_rt24.1-py3.11

Tags

Add tags to make assets easier to find.

Last modified
50 seconds ago by ANJALI JHA

Created on
Aug 7, 2025 by ANJALI JHA

Inp

Promote to space

Promote the asset to a deployment space to deploy the asset or to support a deployment

Colu

Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Targe

+ New

Why

Local file

Define details

Name

Network_Deploy

The space is being prepared...

The space "Network_Deploy" is being created.

○ Step 1 of 1. Creating deployment space.

Deployment stage ⓘ

Select or enter a name that describes the purpose of the space ⌄

Tags (optional)

Cancel   ◐ Creating...

Deployment spaces / Network_Deploy / P2 - Snap Decision Tree Classifier: Network_Detection_ML

Deployments   Model details

Search

New deployment

Name	Type	Status	Tags	Last modified ↓

This asset doesn't have any deployments yet
Use the New Deployment button to create a deployment for this asset.

About this asset ✕

Name ✏

P2 - Snap Decision Tree Classifier: Network_Detection_ML

Description ✏

No description provided.

Asset Details

Type: wml-hybrid_0.1

Model ID: 21b7b6a9-20c6-4e...

Software specification: ✏

hybrid_0.1 ⚙

Hybrid pipeline software specifications:
autoai-kb_rt24.1-py3.11

Tags ✏

Add tags to make assets easier to find.

Source asset details ⌄

Last modified
1 minute ago by ANJALI JHA

Created on
Aug 7, 2025 by ANJALI JHA

Items per page: 20 ⌄   0–0 of 0 items   1 of 1 pages ‹ ›

Inp

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coun

diff_s

dst_t

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dst_t

dst_t

Promote to space

Promote the asset to a deployment space to deploy the asset or to support a deployment.

Target deployment space

| Network_Deploy | ✕ | ⌄ |

Why don't I see all of my spaces? ⓘ

☐ Go to the model in the space after promoting it

Description (Optional)

Description of assets

Find or create tags   ⌄

ⓘ Promoting a version of an asset to a space creates a new asset in the space, with a new asset ID.

Selected assets (1)

Name	Format	Version	Status
P2 - Snap Decision Tree Classifier: ...	Model	Current ⌄	Queued

Promoting an asset promotes dependent assets as well. For example, promoting a model also promotes the associated software specification and package extensions. You will see all promoted assets in the target space.

Cancel   Promote

Promote to space

Promote the asset to a deployment space to deploy the asset or to support a deployment.

Success

Successfully promoted **P2 - Snap Decision Tree Classifier: Network_Detection_ML** to the deployment space. Go to the deployment space to prepare the assets for deployment.

Timestamp 10:34:11 PM

✓ Promotion completed.

Selected assets (1)

Name	Format	Version	Status
P2 - Snap Decision Tree Classifier: Network_Detecti...	Model	Current	Promoted ✓

Promoting an asset promotes dependent assets as well. For example, promoting a model also promotes the associated software specification and package extensions. You will see all promoted assets in the target space.

Close

Deployment spaces /

Network_Deploy

Overview   **Assets**   Deployments   Jobs   Manage

🔍 Find assets   Import assets 🔡   New asset   +

1 asset   ⊞   All assets   ↻

⬚ All assets	1

Asset types

Ⓜ Models	1

Name	Last modified
⬰ P2 - Snap Decision Tree Classifier: Network_Detection_ML Machine learning model from AutoAI	26 seconds ago ANJALI JHA (You) ⋮

Items per page: 20 ∨   1–1 of 1 items   1 of 1 pages ◁ ▷

Deployment spaces /

Network_Deploy

Overview   Assets   Deployments   Jobs   **Manage**

Space

⚙ **General**

🔑 Access control

🖉 Environments

📊 Resource usage

Space GUID

0058ec4e-1280-49e0-b157-57f252714f96 ⧉

Date created

Aug 7, 2025, 10:32 PM
by ANJALI JHA (You)

Last updated

Aug 7, 2025, 10:33 PM

Stage ⓘ

Not provided

Stage type ⓘ

Pre-production

Tags

No tags are set to this space.

Cloud Object Storage-cj

Bucket

6ad0a088-c5ed-4169-ab77-e1a74674aedd

Manage in IBM Cloud ⧉

watsonx.ai Runtime service   ⓘ 🖉

watsonx.ai Runtime-mj ⊝

Controls

Cloud Pak for Data platform ⓘ   Switch platform ⇄

Reporting on asset metadata is allowed ⓘ   Grant access 📋

Opt-in to folders β   Enable folders 🗀

Deployment spaces / Network_Deploy / P2 - Snap Decision Tree Classifier: Network_Detection_ML

Create a deployment

Define details

⚔ Associated asset
P2 - Snap Decision Tree Classifier: Network_Detection_ML

Deployment type

Online ✓	**Batch**
Run the model on data in real-time, as data is received by a web service.	Run the model against data as a batch process.

Name

Network_Deployment2

Serving name

Deployment serving name

Enter a short name to be used as the serving name for the deployment. The name must be unique to be valid.

Description

Cancel

Create

Deployment spaces / Network_Deploy / P2 - Snap Decision Tree Classifier: Network_Detection_ML

Deployments   Model details

Search

New deployment

Name	Type	Status	Tags	Last modified
Network_Deployment2	Online	✓ Deployed		27 seconds ago ANJALI JHA (You)

About this asset ✕

Name ✎

P2 - Snap Decision Tree Classifier:
Network_Detection_ML

Description ✎

No description provided.

Asset Details

Type: wml-hybrid_0.1

Model ID: 21b7b6a9-20c6-4e...

Software specification:
hybrid_0.1 ⚙

Hybrid pipeline software specifications:
autoai-kb_rt24.1-py3.11

Tags ✎

Add tags to make assets easier to find.

Source asset details ⌄

Last modified
6 minutes ago by ANJALI JHA

Created on
Aug 7, 2025 by ANJALI JHA

Items per page: 20 ⌄   1–1 of 1 items   1 of 1 pages

Deployment spaces / Network_Deploy / P2 - Snap Decision Tree Classifier: Network_Detection_ML /   🗑 ⓘ ⫘ ↺ 💬 ⬢

Network_Deployment2 ✓ Deployed Online

API reference   Test

Endpoints for scoring ⓘ

Private endpoint

```
https://private.eu-gb.ml.cloud.ibm.com/ml/v4/deployments/190fe2ca-57be-4210-8de3-82f5de12bf02/predict⋮
```
⧉

Bearer <token> ⓘ

```
IAM
```

Public endpoint

```
https://eu-gb.ml.cloud.ibm.com/ml/v4/deployments/190fe2ca-57be-4210-8de3-82f5de12bf02/predictions?ver⋮
```
⧉

Learn more about the 2021-05-01 version query parameter

Code snippets ✏

cURL	Java	JavaScript	Python	Scala

```
# NOTE: you must set $API_KEY below using information retrieved from your IBM Cloud account (https://eu-gb.dataplatform.cloud.ibm.com/docs/⋮  ⧉

export API_KEY=<your API key>

export IAM_TOKEN=$(curl --insecure -X POST --location "https://iam.cloud.ibm.com/identity/token" \
--header "Content-Type: application/x-www-form-urlencoded" \
--header "Accept: application/json" \
--data-urlencode "grant_type=urn:ibm:params:oauth:grant-type:apikey" \
--data-urlencode "apikey=$API_KEY" | jq -r '.access_token')

# TODO:  manually define and pass values to be scored below
```

About this deployment ✕

Name ✏

Network_Deployment2

Description ✏

No description provided.

Deployment Details

Deployment ID: 190fe2ca-57be-42...

Serving name: ✏
No serving name.

Software specification: ✏
hybrid_0.1 ⚙

Hybrid pipeline software specifications:
autoai-kb_rt24.1-py3.11

Copies: ✏
1

Tags ✏

Add tags to make assets easier to find.

Associated asset ✏

⚒ P2 - Snap Decision Tree Classifier: Net...
21b7b6a9-20c6-4eff-b1cf-f56f821ffda3

Last modified
60 seconds ago

Created on
Aug 7, 2025

Network_Deployment2 ✓ Deployed Online

API reference **Test**

Enter input data

Text   JSON

Enter data manually or use a CSV file to populate the spreadsheet. Max file size is 50 MB.

Download CSV template ⤓   Browse local files ↗   Search in space ↗   Clear all ✕

	duration (double)	protocol_type (other)	service (other)	flag (other)	src_bytes (double)	dst_bytes (double)	land (double)	wrong_fragment (double)	urgent (double)	h:
1	0	udp	other	SF	146	0	0	0	0	0
2	5706	tcp	http	SO	255	0	0	1	1	0
3										
4										
5										
6										
7										
8										

2 rows, 41 columns

Predict

Prediction results

Prediction type

Binary classification

Prediction percentage

2
records

■ normal

Confidence level distribution
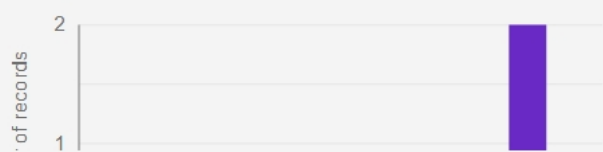
Display format for prediction results

○ Table view ○ JSON view

Show input data ⓘ

	Prediction	Confidence
1	normal	100%
2	normal	100%
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Download JSON file

THANK YOU