**Problem Statement No. 38 - Improved Source of Drinking Water**

**The Challenge:** Access to safe and improved sources of drinking water remains a critical issue in India, especially in rural and underdeveloped regions. Despite ongoing efforts under the Sustainable Development Goals (SDGs), inequalities persist in water accessibility across states and socio-economic groups. This project aims to analyze data from the 78th Round of the Multiple Indicator Survey (MIS) to assess the percentage of the population with access to improved drinking water sources. It will also explore related indicators such as use of clean cooking fuel and migration trends. By identifying patterns and disparities, the study will generate actionable insights to support evidence-based policymaking. The ultimate goal is to help ensure equitable access to clean water and contribute to India's progress on SDG targets.

**AI Kosh Dataset Link –**
https://aikosh.indiaai.gov.in/web/datasets/details/improved_source_of_drinking_water_multiple_indicator_survey_78th_round.html

**Technology -** Use of IBM cloud lite services is mandatory.

IBM watsonx.ai Studio

Search in your workspaces

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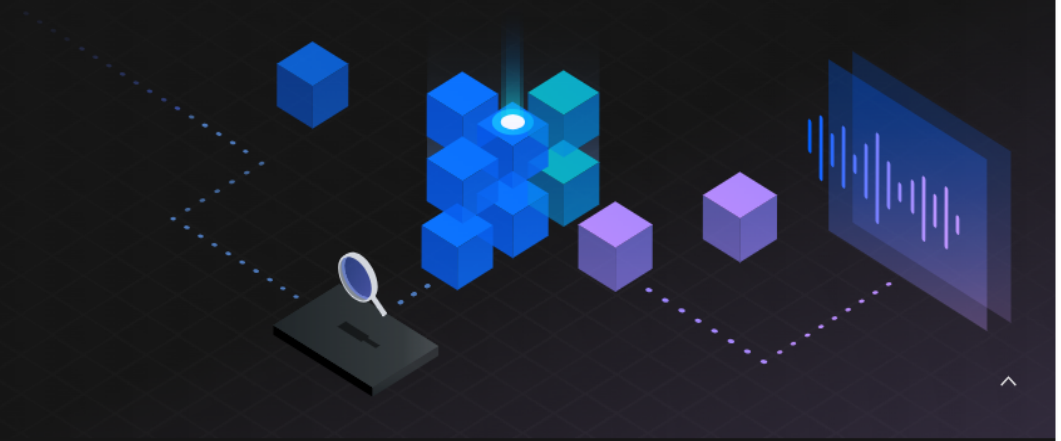
Supraja Mekala's Account

Sydney

SM

# Welcome, Supraja!



### Take a tutorial

Step through implementing a Data fabric use case in a sample project.

### Work with data

Create a project for your team to prepare data, find insights, or build models.

### Find what you need

Open this interactive map to find the tools that you need for your tasks.

## Quick start

- Build customer profiles with IBM Match 360 with Watson
- Catalog and govern data with watsonx.data intelligence
- Build and manage ML models with watsonx.ai Studio

## Projects

Improved Source of Drinking Water — Today at 8:37 PM

SM

## New in Resource hub

Knowledge Accelera...

## Notifications

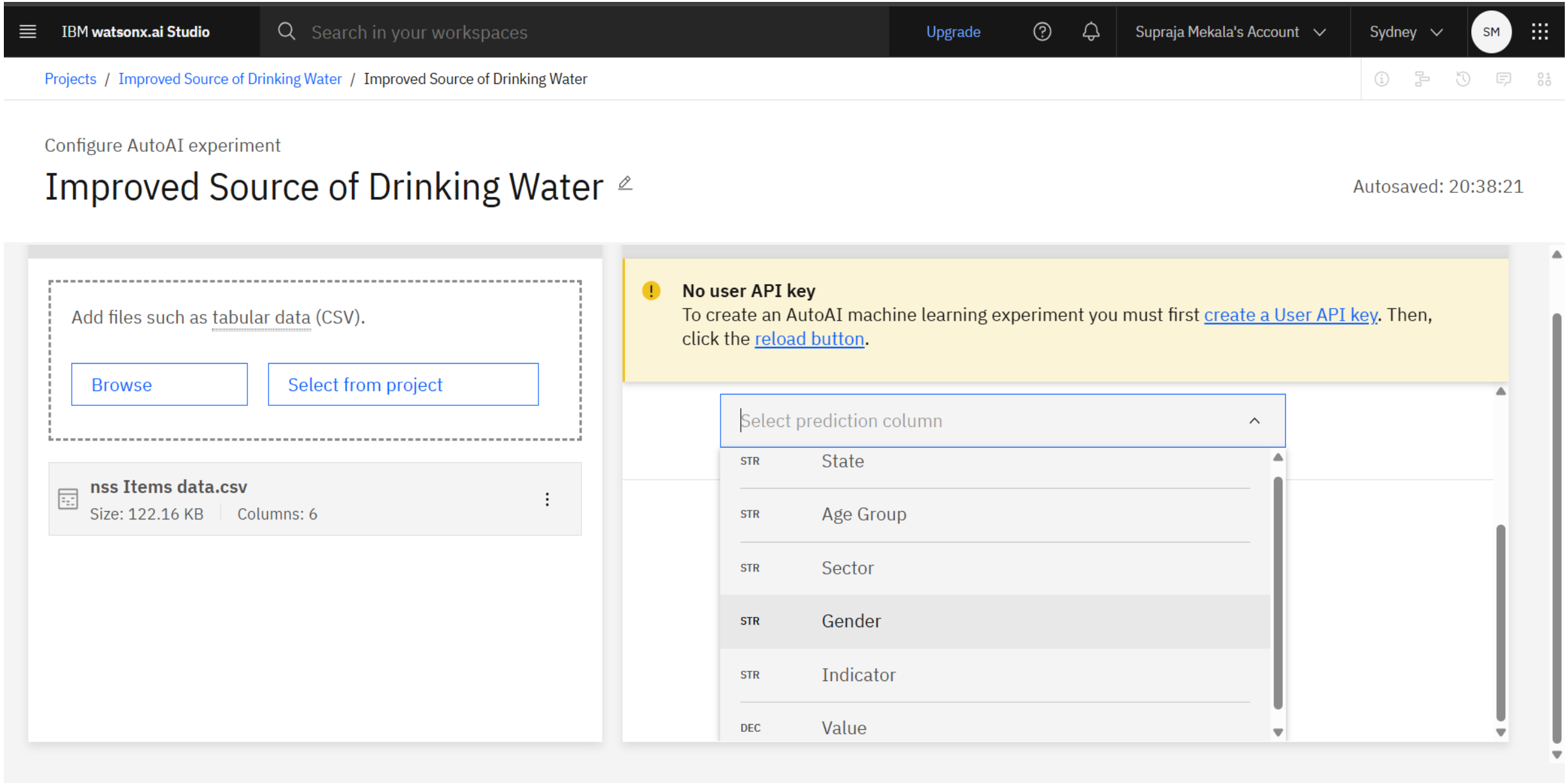
**Online deployment ready**

The online deployment Improved Source of Drinking Water in space Improved Source o...

Today at 8:52 PM

## Deployments

Improved Source of Drinking Water — Today at 8:51 PM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Projects / Improved Source of Drinking Water / Improved Source of Drinking Water
Configure AutoAI experiment
Improved Source of Drinking Water
Autosaved: 20:38:21
Add files such as tabular data (CSV).
Browse
Select from project
nss Items data.csv
Size: 122.16 KB
Columns: 6
No user API key
To create an AutoAI machine learning experiment you must first create a User API key. Then, click the reload button.
Select prediction column
STR State
STR Age Group
STR Sector
STR Gender
STR Indicator
DEC Value

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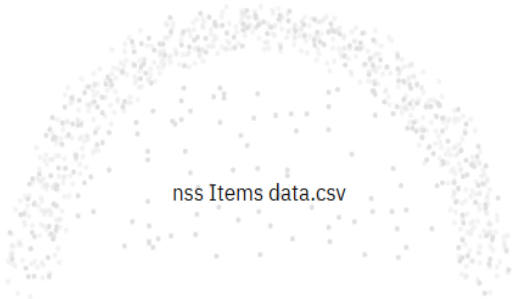
Projects / Improved Source of Drinking Water / Improved Source of Drinking Water

**Experiment summary** | Pipeline comparison | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

## Relationship map

Prediction column: Value




## Progress map

Swap view

Reading data source

NSS ITEMS DATA.CSV

Downloading source data

*Time elapsed: 19 seconds*

View log | Save code

## Pipeline leaderboard

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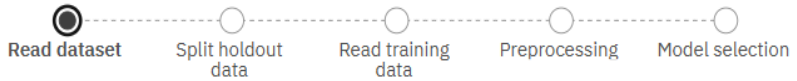
**Experiment summary** | Pipeline comparison | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

## Progress map

Prediction column: Value




## Relationship map

Swap view

Reading data source

NSS ITEMS DATA.CSV

Downloading source data

*Time elapsed: 40 seconds*

View log | Save code

## Pipeline leaderboard

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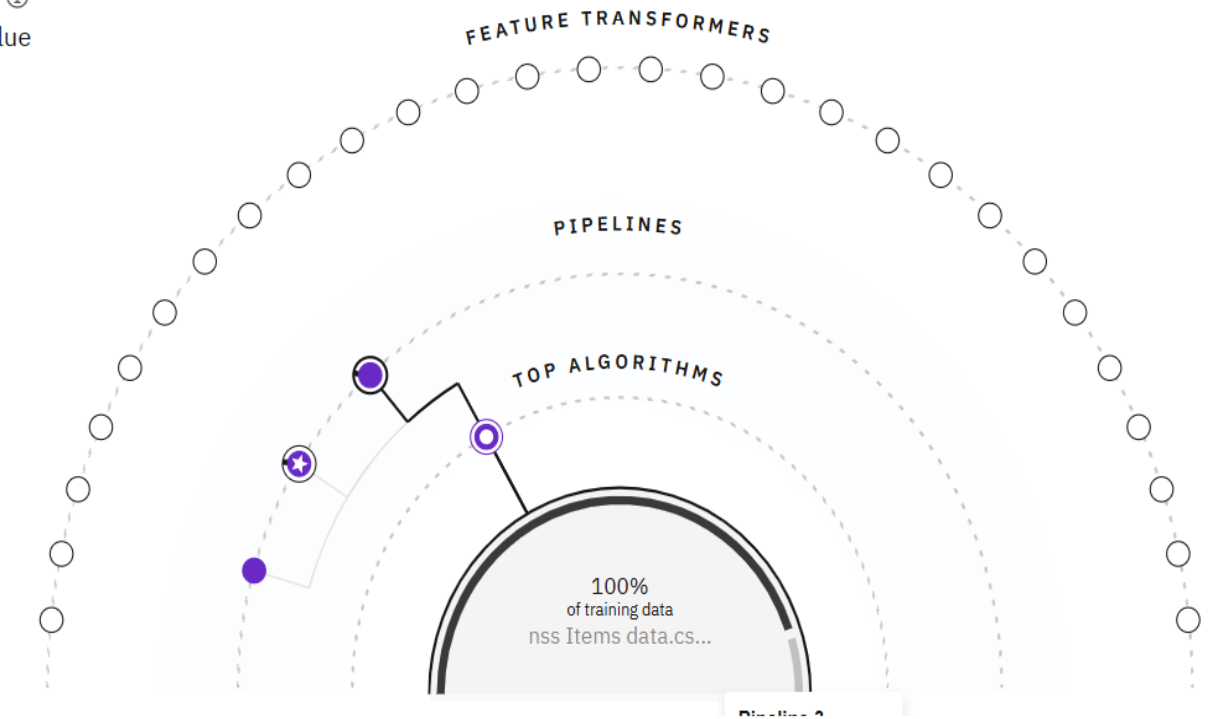
**Experiment summary** | Pipeline comparison | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

## Relationship map

Prediction column: Value




## Progress map

Swap view

Feature engineering

SNAP BOOSTING MACHINE REGRESSOR

Started feature engineering for pipeline P3

*Time elapsed: 2 minutes*

View log | Save code

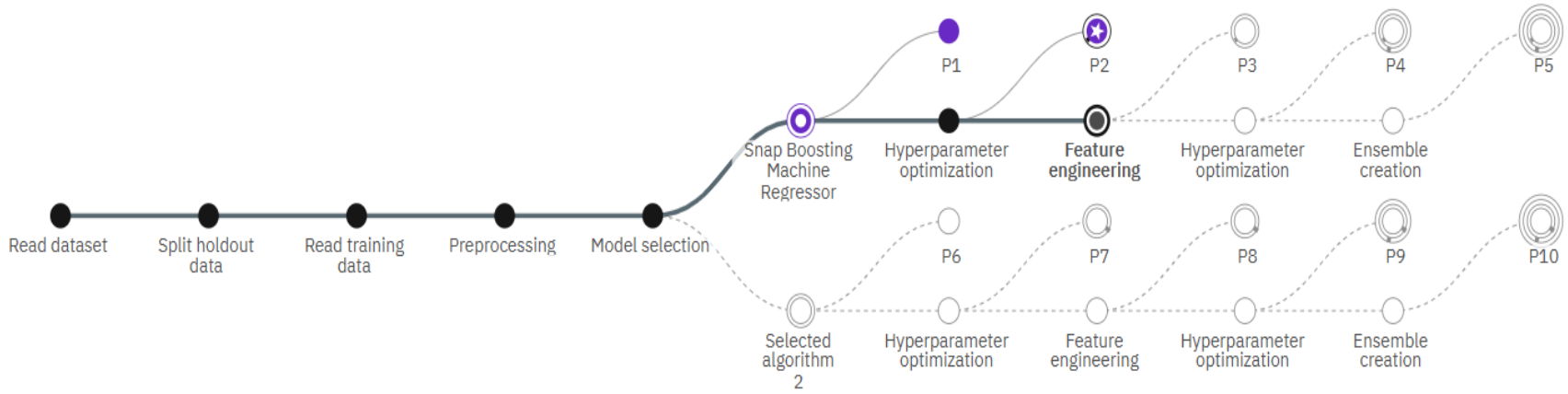
## Pipeline leaderboard

**Experiment summary** | Pipeline comparison

★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

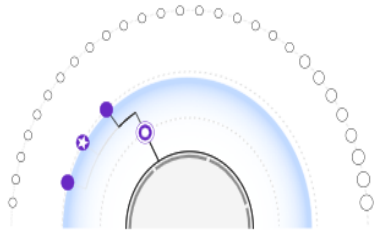
## Progress map

Prediction column: Value




## Relationship map

Swap view



### Feature engineering

SNAP BOOSTING MACHINE REGRESSOR

Started feature engineering for pipeline P3

*Time elapsed: 2 minutes*

View log | Save code

## Pipeline leaderboard

Experiment summary | **Pipeline comparison** | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

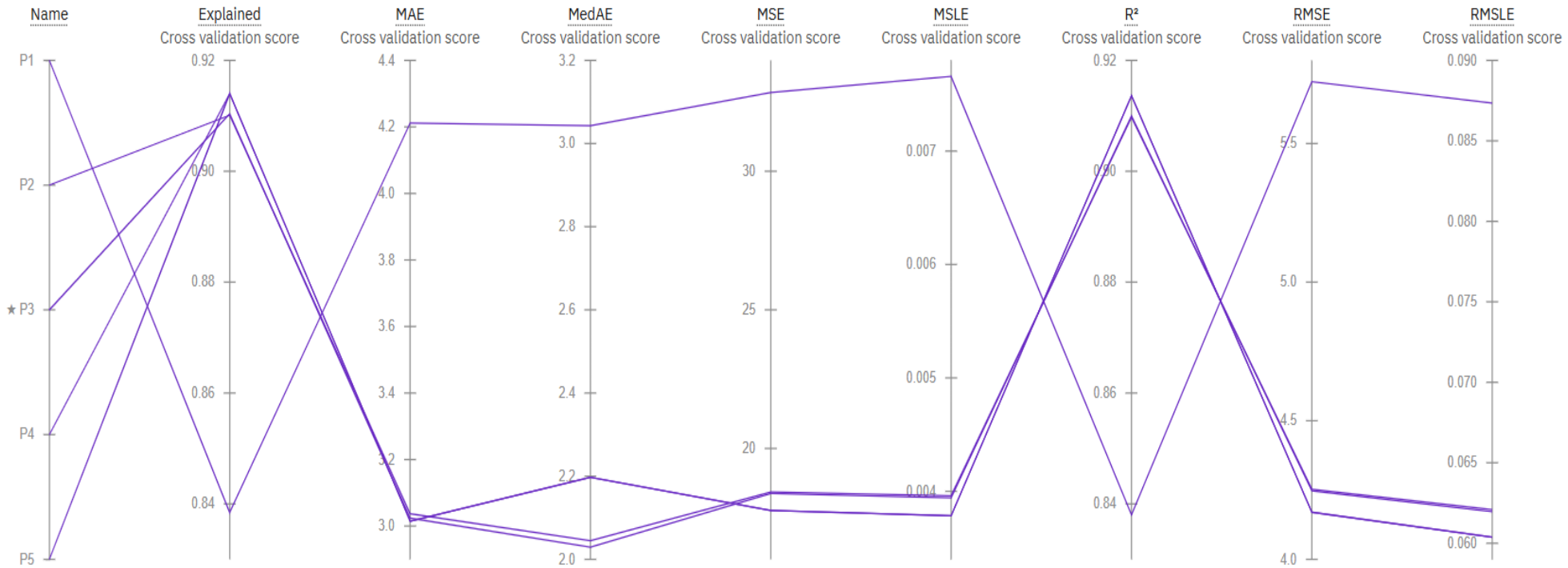

## Pipeline leaderboard

| | Rank ↑ | Name | Algorithm | Specialization | RMSE (Optimized) Cross Validation | Enhancements | Build time |
|---|---|---|---|---|---|---|---|
| ★ | 1 | **Pipeline 5** | Batched Tree Ensemble Regressor (Snap Boosting Machine Regressor) | INCR | 4.170 | HPO-1 FE HPO-2 BATCH | 00:00:26 |
| | 2 | **Pipeline 4** | Snap Boosting Machine Regressor | | 4.170 | HPO-1 FE HPO-2 | 00:00:24 |
| | 3 | **Pipeline 3** | Snap Boosting Machine Regressor | | 4.247 | HPO-1 FE | 00:00:21 |
| | 4 | **Pipeline 2** | Snap Boosting Machine Regressor | | 4.252 | HPO-1 | 00:00:04 |

Experiment summary | **Pipeline comparison** | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

## Metric chart

Prediction column: Value



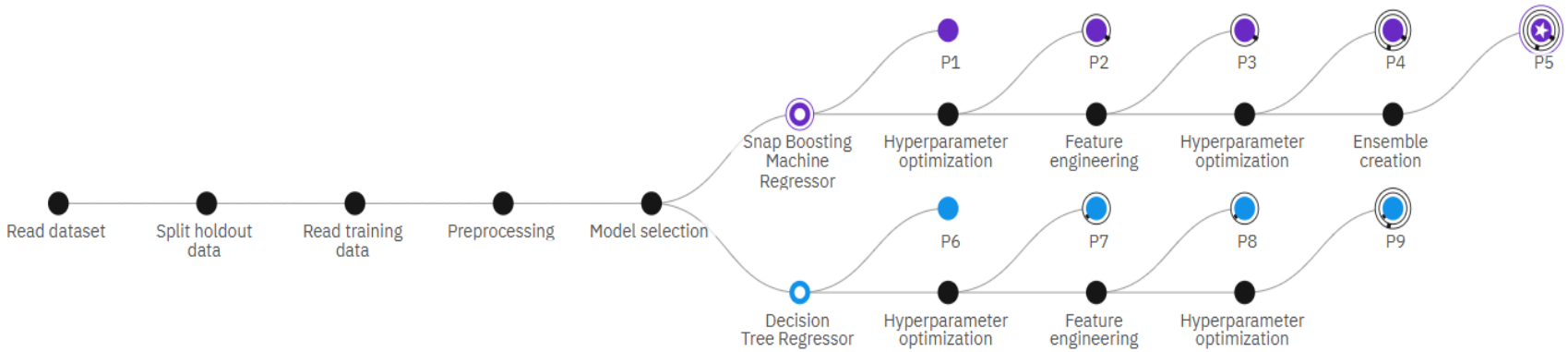

## Pipeline leaderboard

RMSE (Optimized)

**Experiment summary** | Pipeline comparison | ★ **Rank by:** Root mean squared error (RMSE) (... | Cross validation score

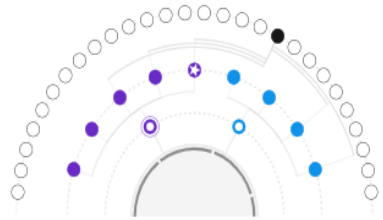
## Progress map

Prediction column: Value




## Relationship map

Swap view



Experiment completed

9 PIPELINES GENERATED

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

*Time elapsed: 3 minutes*

View log | Save code

## Pipeline leaderboard

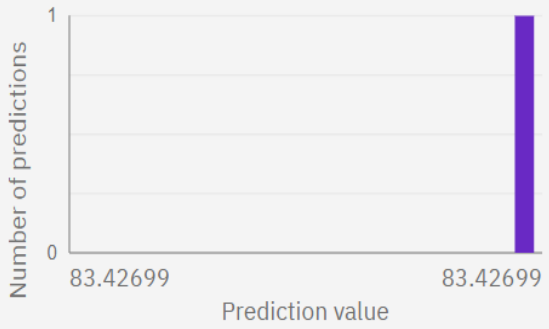
# Prediction results

Close

Prediction type

## Regression

**Prediction distribution**




Display format for prediction results

(•) Table view ( ) JSON view

Show input data

| | Prediction |
|---|---|
| 1 | 83.42699434073944 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |

Download JSON file