Microsoft

Hyperparameter Tuning

Contents

Goals and Requirements

Estimated time to complete lab is 40-45 minutes

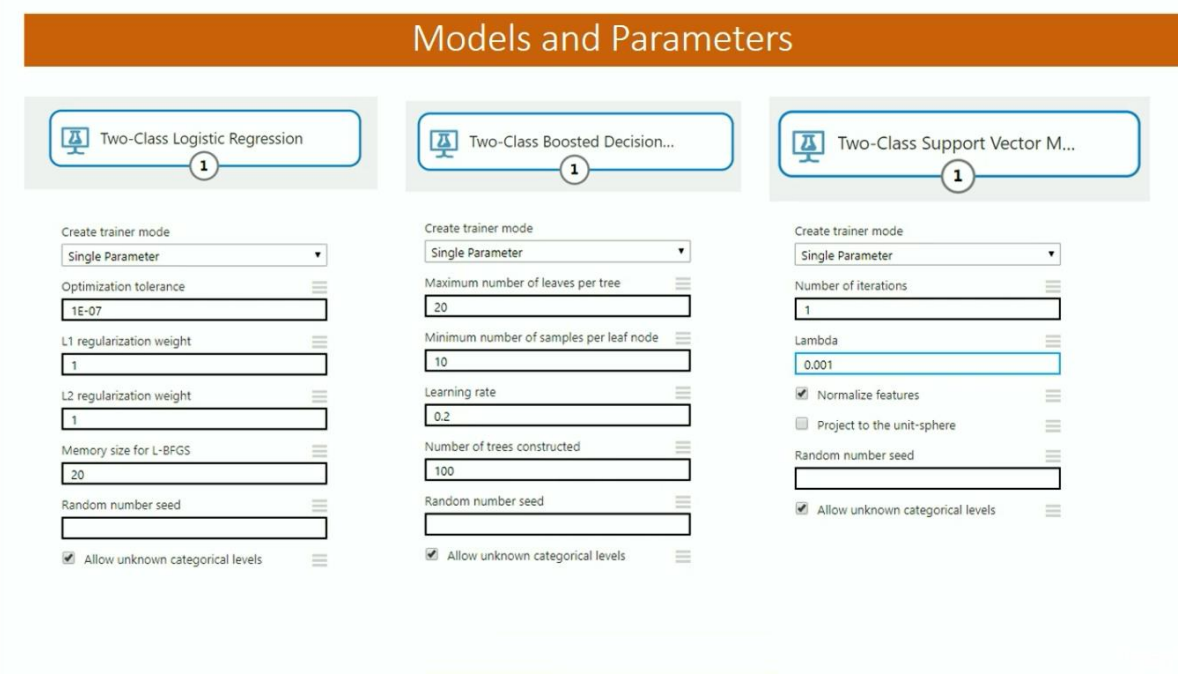
Goals

1. Implement and design a model by using Hyper Tuning Parameters.

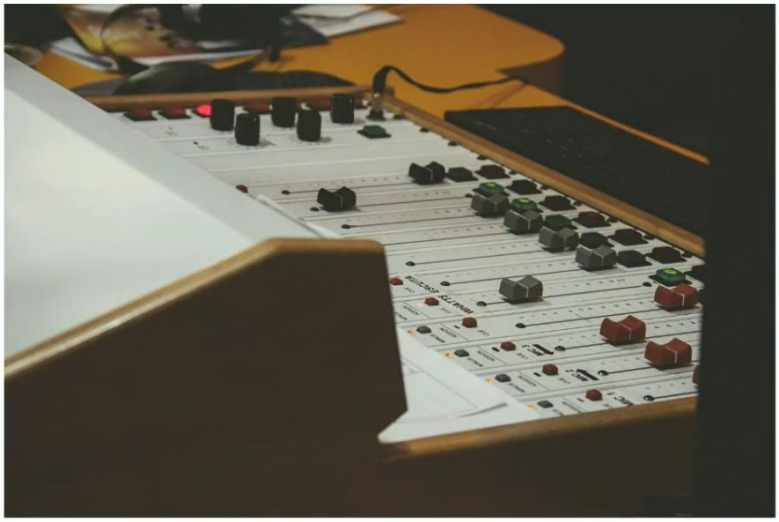
Requirements:

1. Access to an Azure Machine Learning Studio

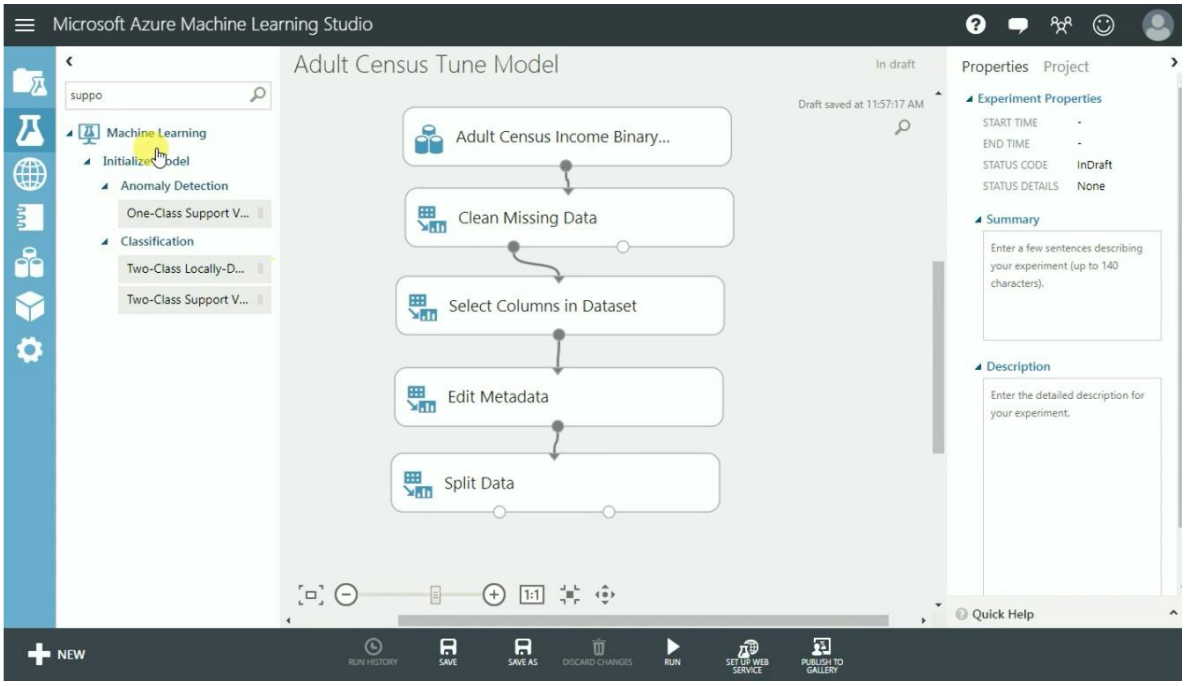
Hyperparameter Tuning



What are Hyperparameters?

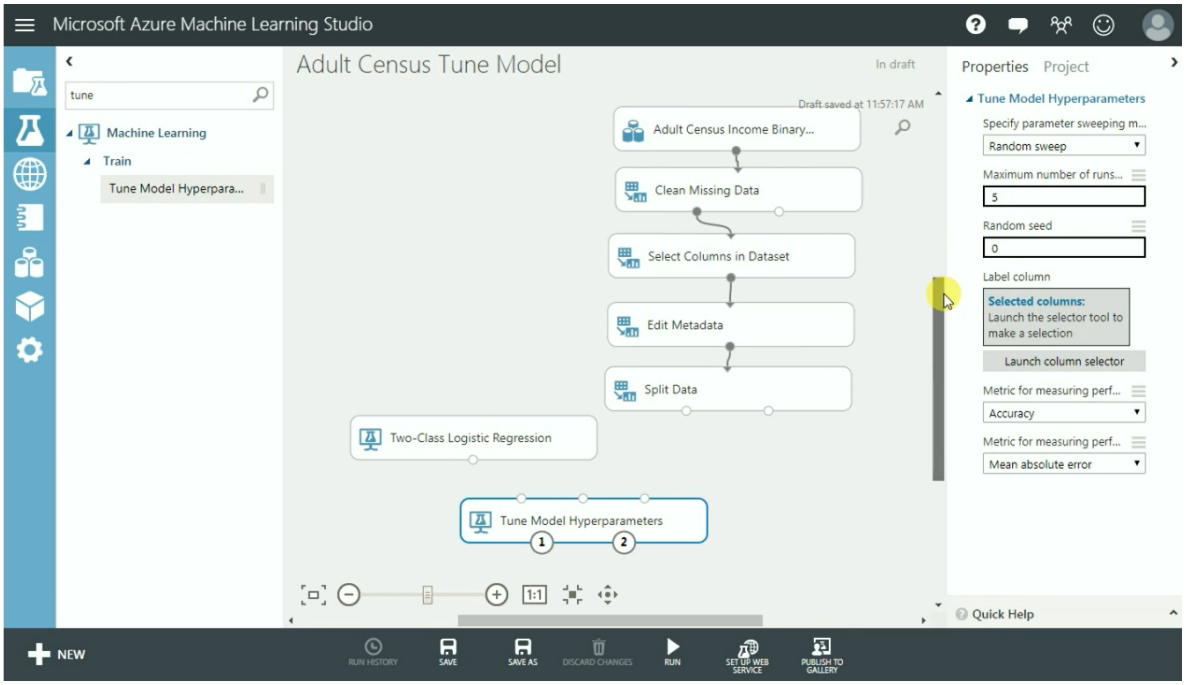


Let take adult census data for predicting the income

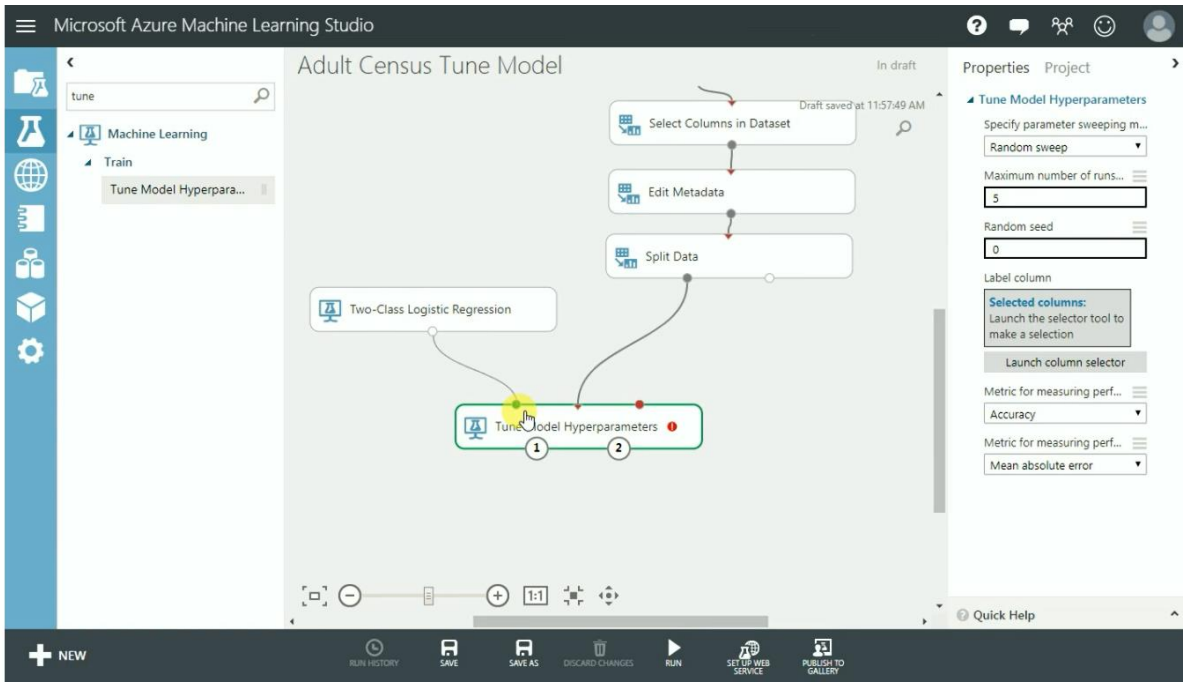


Datasets for two class logistics regression and tune model hyperparameters

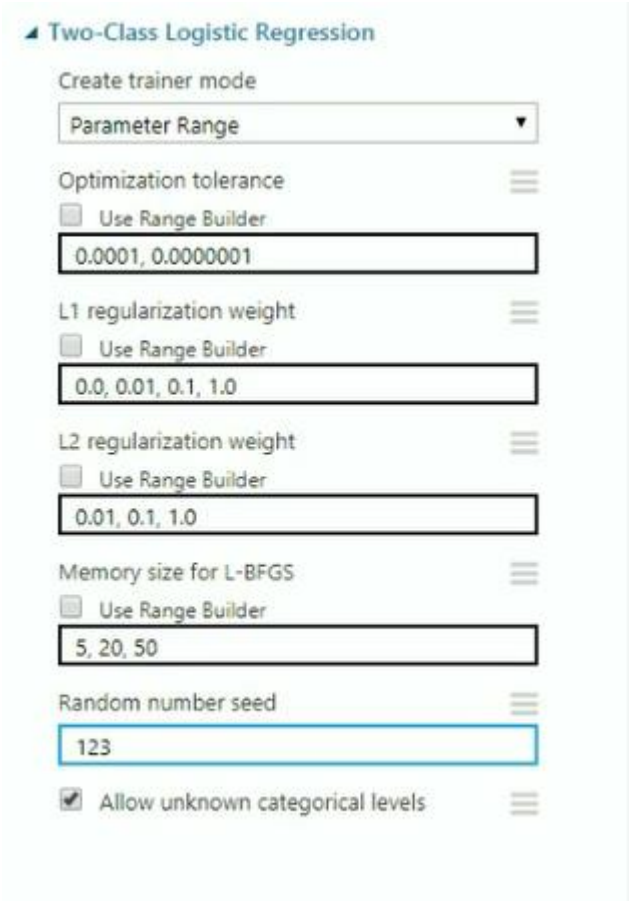
Place two class logistics regression and tune model hyperparameters



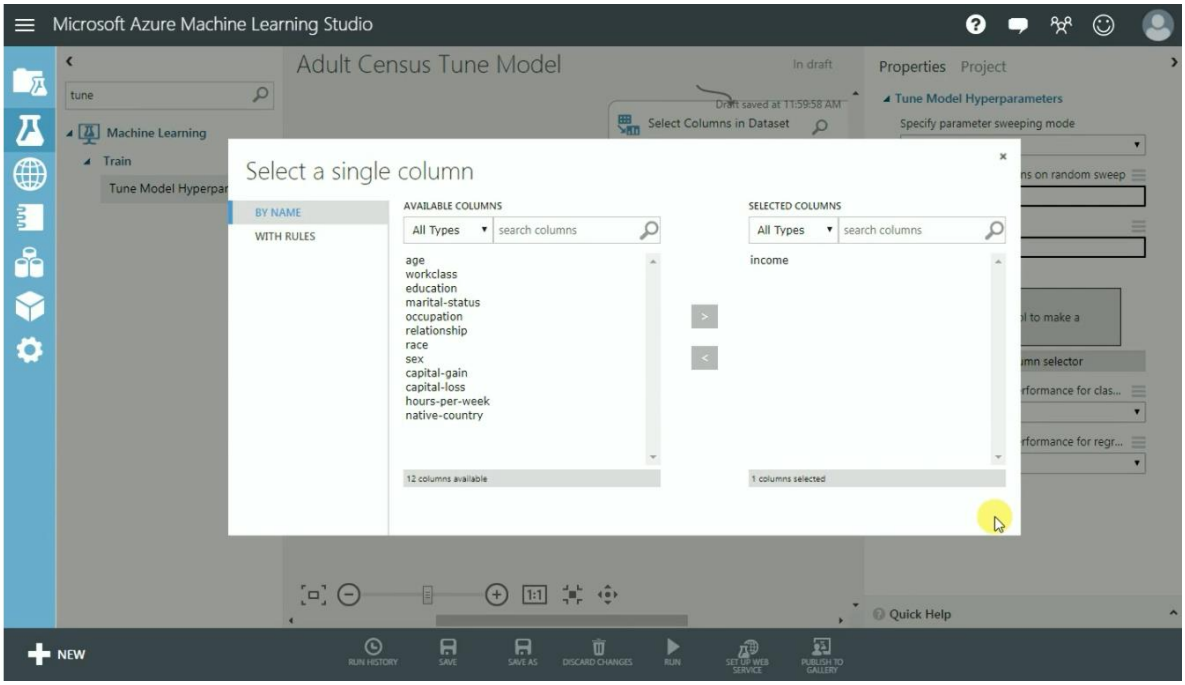
Connect the nodes as shown



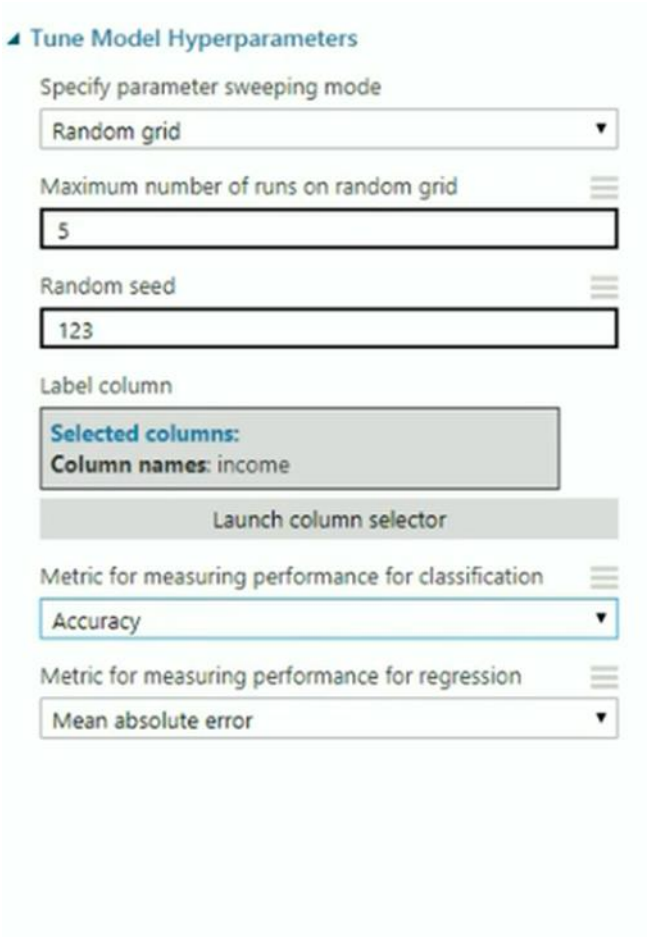
Set parameters for two class logistic regression



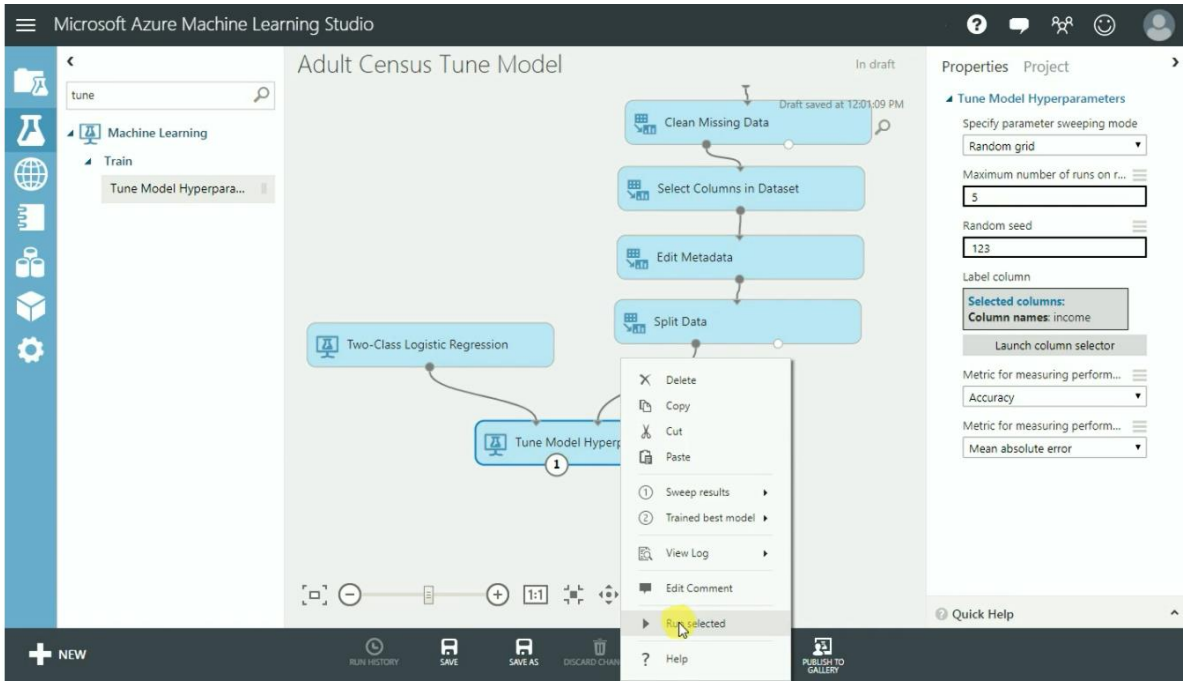
Launch column selector from tune model hyperparameter and select income then click ok



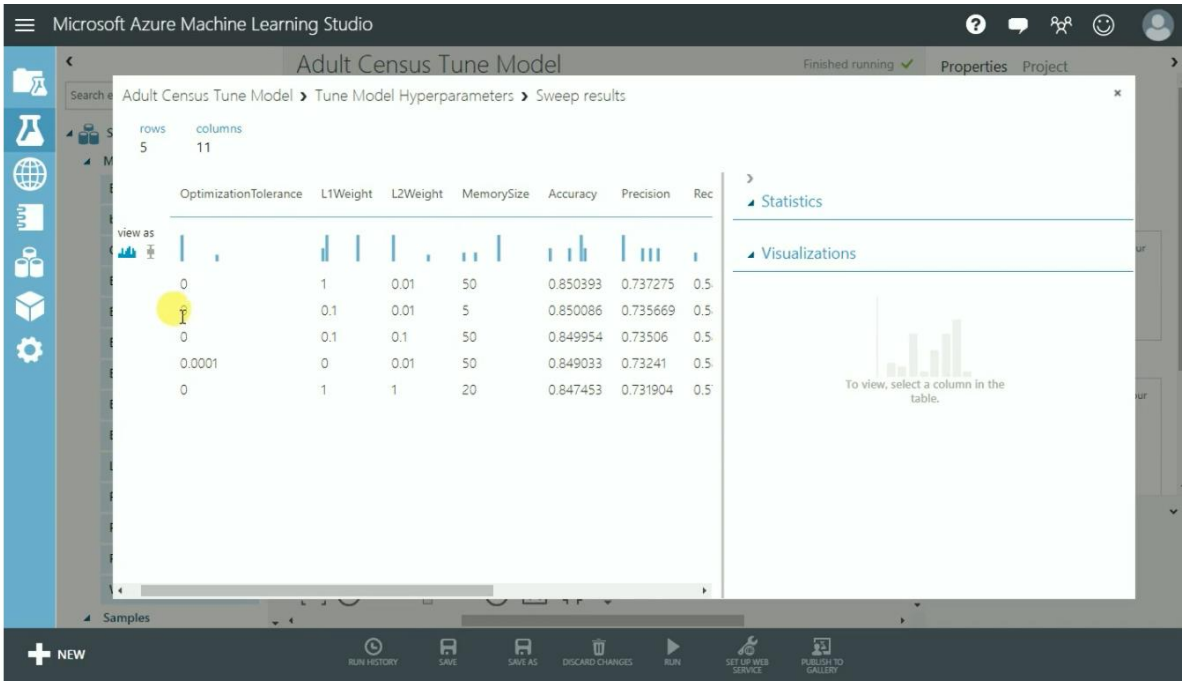
Set parameters for tune model hyperparameters

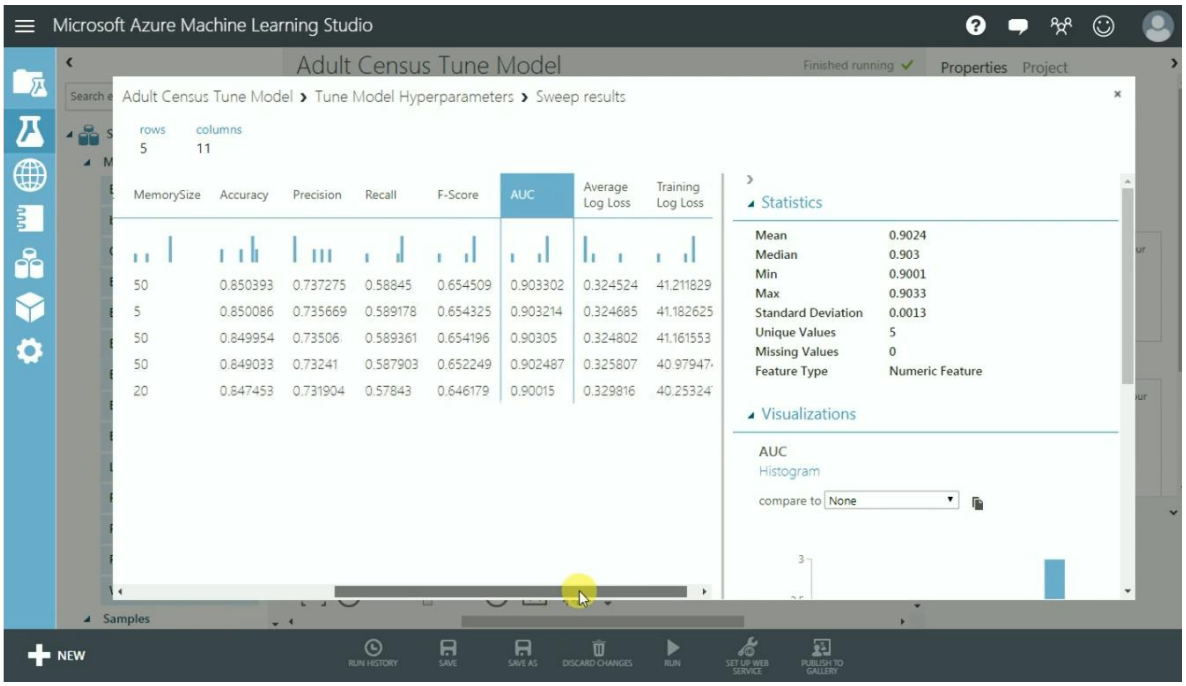


Run the module



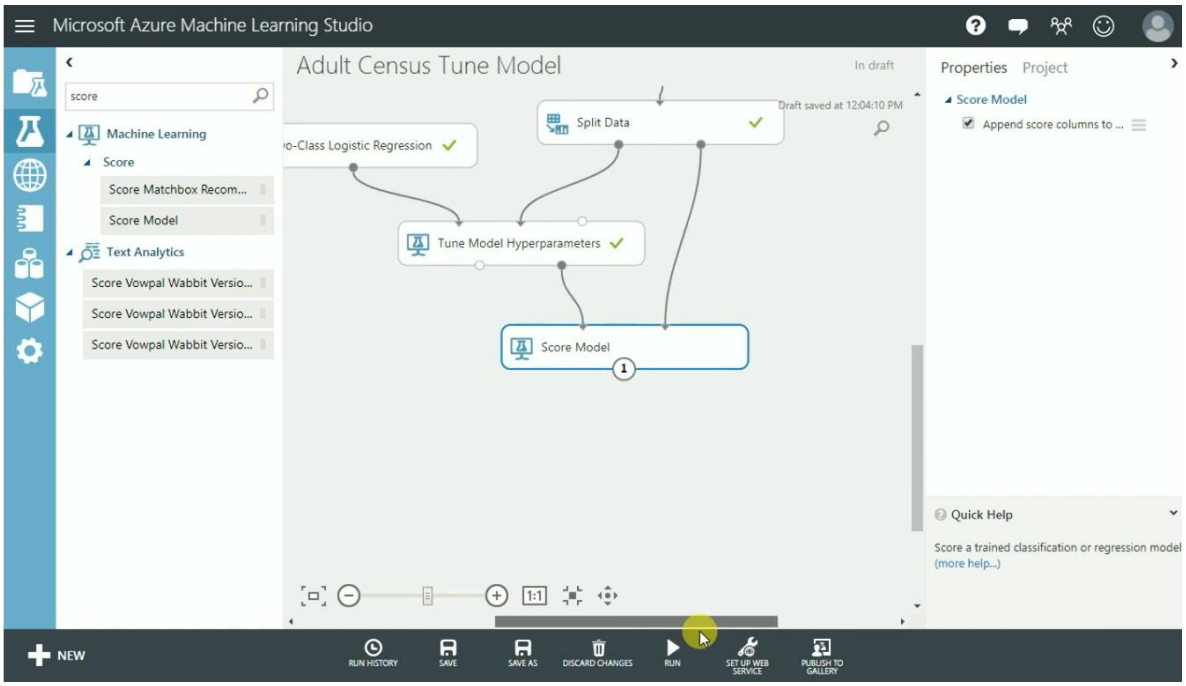
Visualize for results


Microsoft Azure Machine Learning Studio
Adult Census Tune Model
Finished running
Properties
Project
Adult Census Tune Model › Tune Model Hyperparameters › Sweep results
rows 5
columns 11
OptimizationTolerance L1Weight L2Weight MemorySize Accuracy Precision Rec
0 1 0.01 50 0.850393 0.737275 0.5
0.1 0.01 5 0.850086 0.735669 0.5
0 0.1 0.1 50 0.849954 0.73506 0.5
0.0001 0 0.01 50 0.849033 0.73241 0.5
0 1 1 20 0.847453 0.731904 0.5
Statistics
Visualizations
To view, select a column in the table.
Samples
NEW
RUN HISTORY
SAVE
SAVE AS
DISCARD CHANGES
RUN
SET UP WEB SERVICE
PUBLISH TO GALLERY


Microsoft Azure Machine Learning Studio
Adult Census Tune Model
Finished running
Properties
Project
Adult Census Tune Model › Tune Model Hyperparameters › Sweep results
rows 5
columns 11
MemorySize Accuracy Precision Recall F-Score AUC Average Log Loss Training Log Loss
50 0.850393 0.737275 0.58845 0.654509 0.903302 0.324524 41.211829
5 0.850086 0.735669 0.589178 0.654325 0.903214 0.324685 41.182625
50 0.849954 0.73506 0.589361 0.654196 0.90305 0.324802 41.161553
50 0.849033 0.73241 0.587903 0.652249 0.902487 0.325807 40.97947
20 0.847453 0.731904 0.57843 0.646179 0.90015 0.329816 40.25324
Statistics
Mean 0.9024
Median 0.903
Min 0.9001
Max 0.9033
Standard Deviation 0.0013
Unique Values 5
Missing Values 0
Feature Type Numeric Feature
Visualizations
AUC
Histogram
compare to None
Samples
NEW
RUN HISTORY
SAVE
SAVE AS
DISCARD CHANGES
RUN
SET UP WEB SERVICE
PUBLISH TO GALLERY

Dataset for Score Model

Close the result and add score model and connect nodes as below



Run and visualize the result and evaluate if required