Deakin University

SIG788- OnTrack Submission

Task 3. P

Submitted by

Neethu Sidhardhan
S223494027
Attempt # 1
27/3/2023

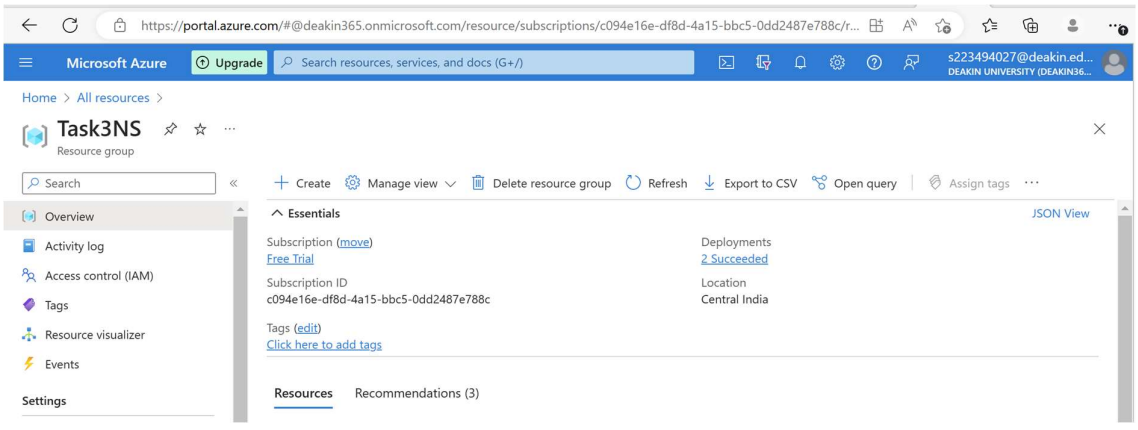
Target Grade: **P**

Task Details –

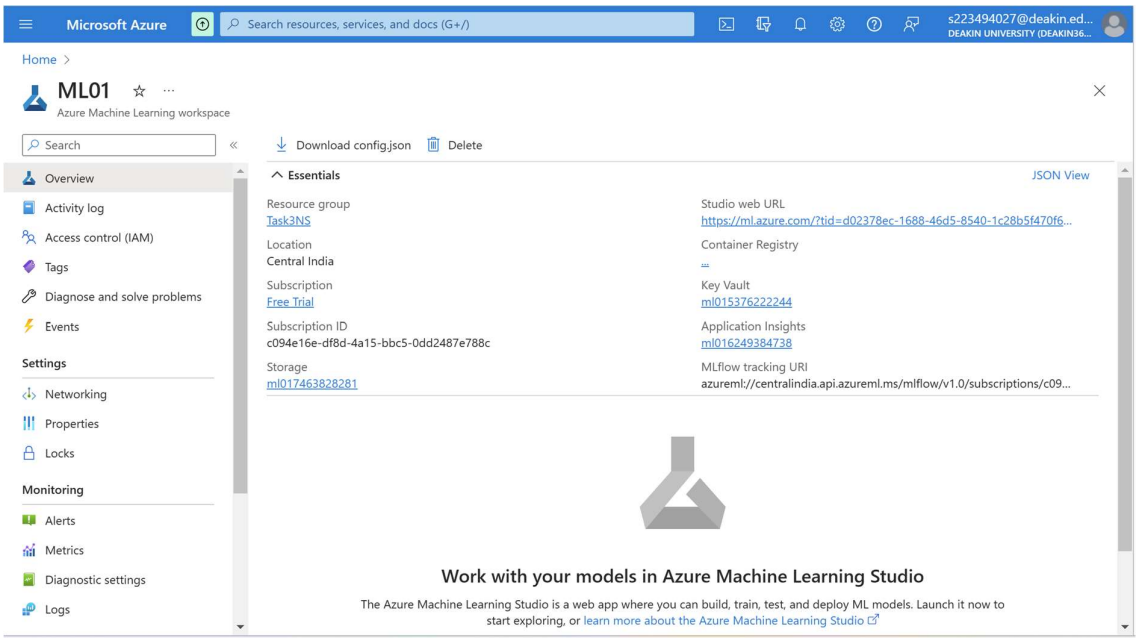
Grade: P

Q1: For this task you need to design and deploy a machine learning model using Azure ML studio (designer). You need to use Microsoft Azure Machine Learning Studio to design and deploy your model. To complete this task, you need to select a dataset and design a decision tree model (classification tree or regression tree) and then deploy the built model and get the API key. To do this task you need to follow the workshop recording and slides and deploy your own model on Azure. You need to provide the screenshots of your designed model, training model, the performance of the built model (e.g., Accuracy, confusion matrix and etc) and deployed model with the API key and test the model. The screenshot of the model should include your Azure account name since the API key is unique to you.

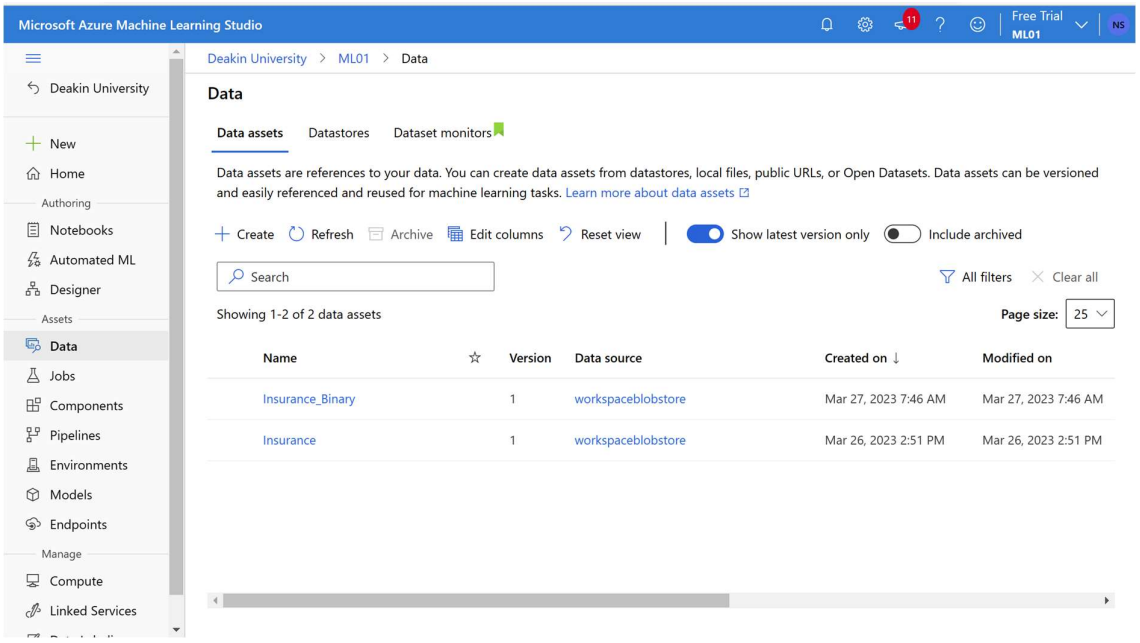
Step 1: Create Resources



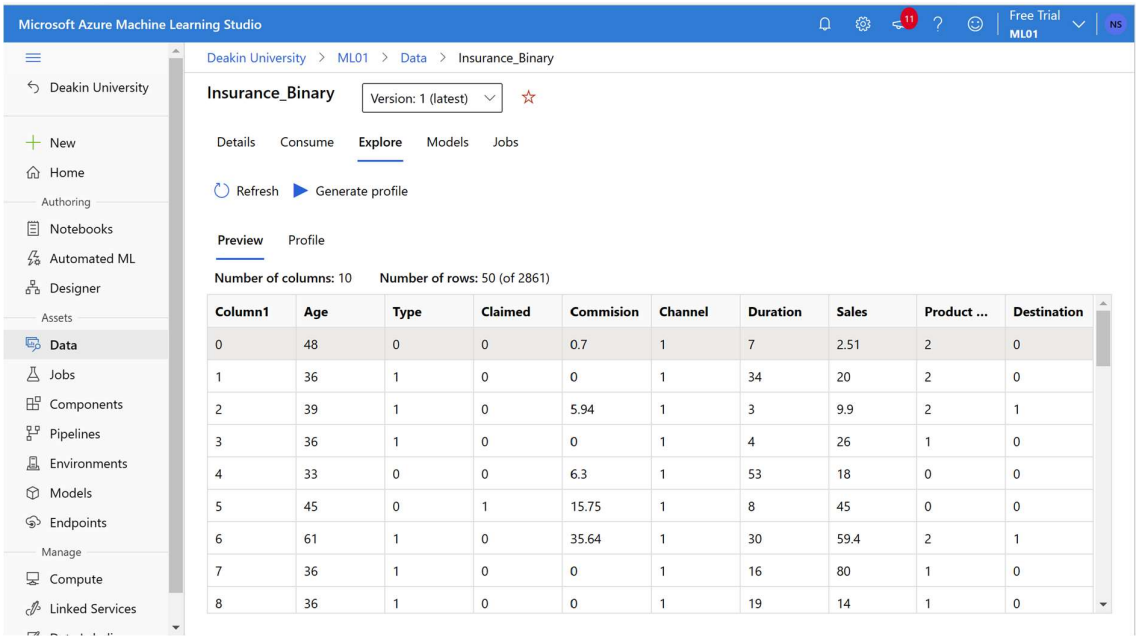
Step 2: Create a new workspace



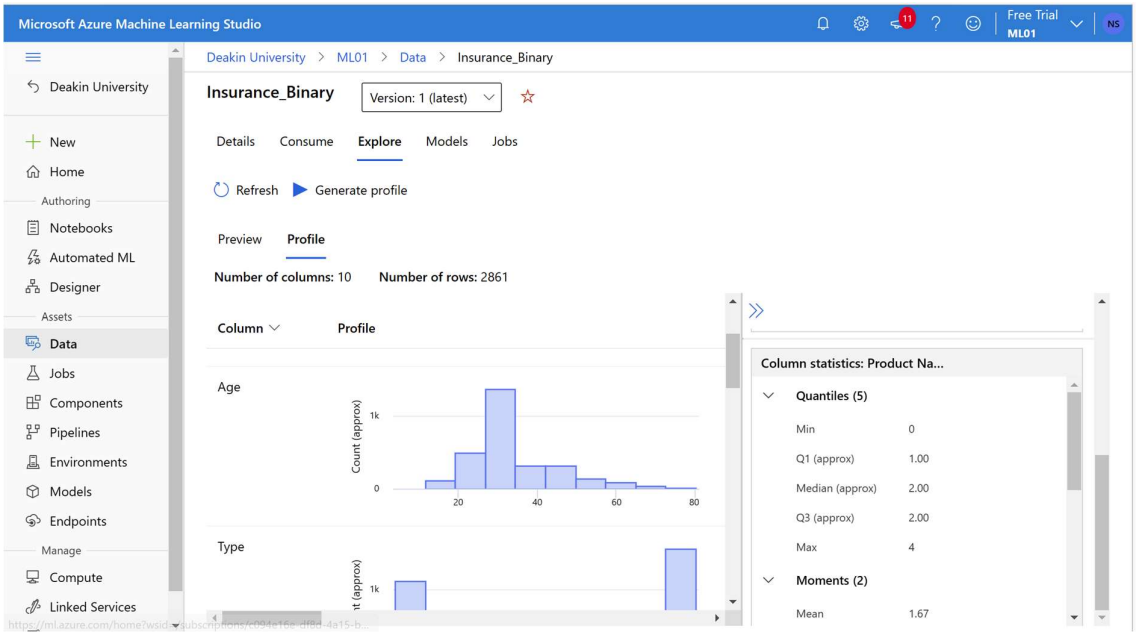
Step 3: Upload the Dataset

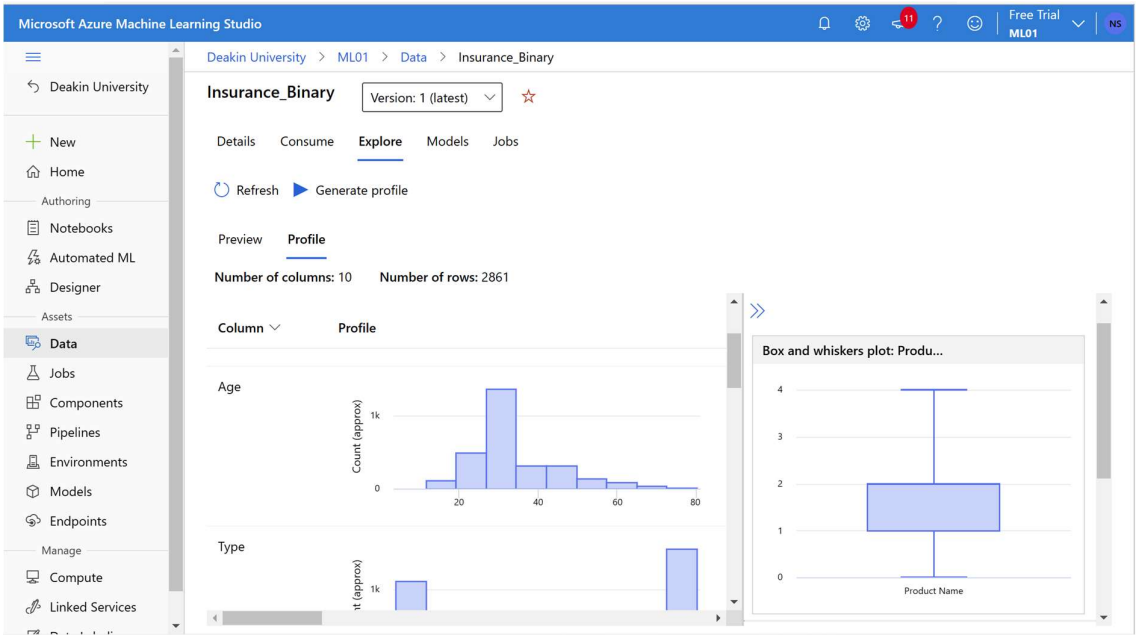


Step 4: Explore the dataset, EDA of Dataset

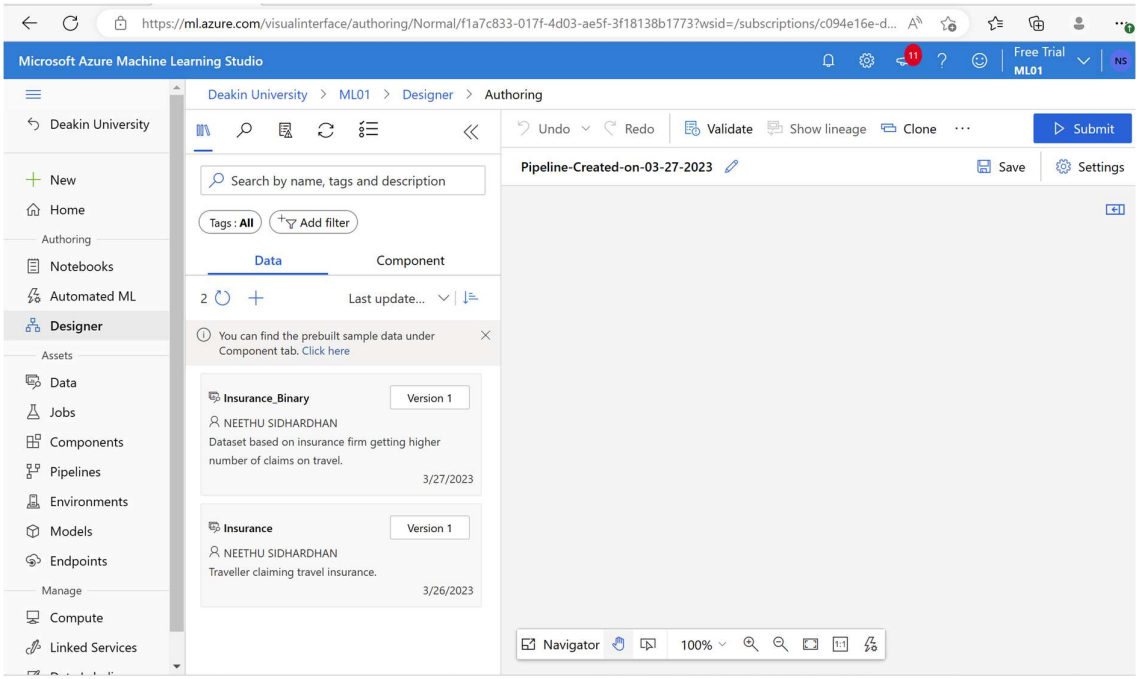


Column1	Age	Type	Claimed	Commision	Channel	Duration	Sales	Product ...	Destination
0	48	0	0	0.7	1	7	2.51	2	0
1	36	1	0	0	1	34	20	2	0
2	39	1	0	5.94	1	3	9.9	2	1
3	36	1	0	0	1	4	26	1	0
4	33	0	0	6.3	1	53	18	0	0
5	45	0	1	15.75	1	8	45	0	0
6	61	1	0	35.64	1	30	59.4	2	1
7	36	1	0	0	1	16	80	1	0
8	36	1	0	0	1	19	14	1	0

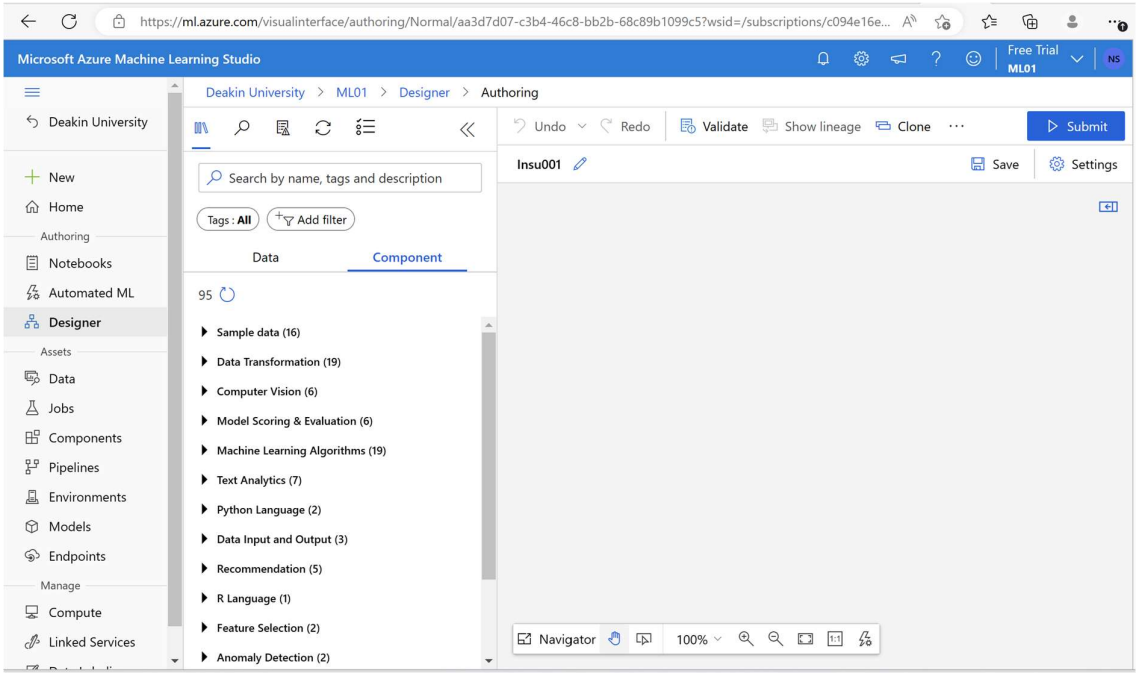




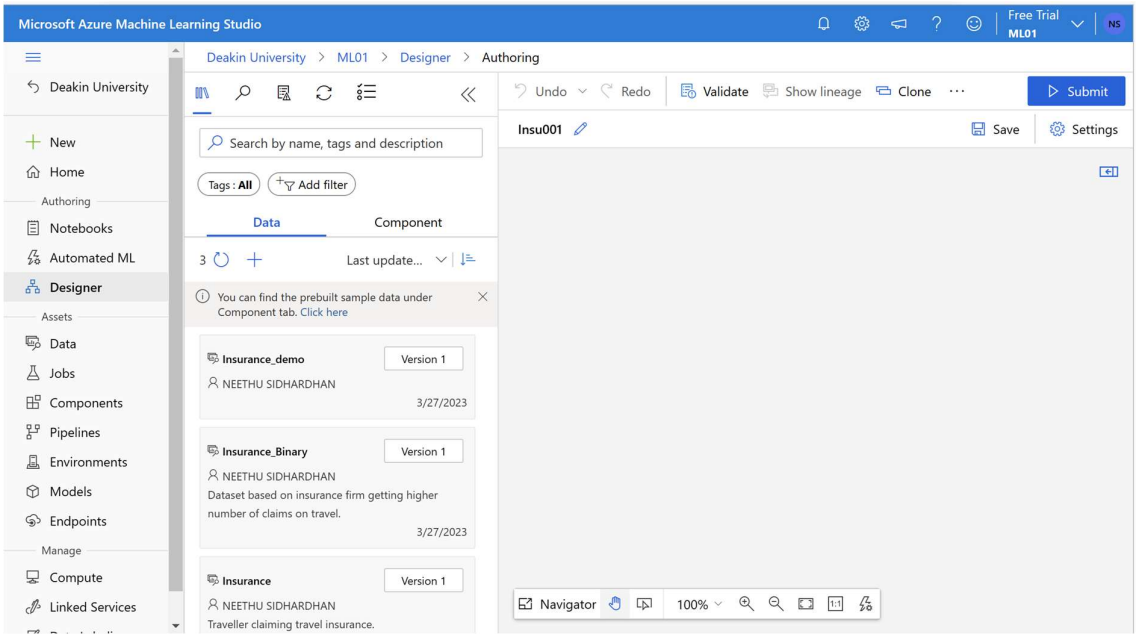
Step 5: Create Pipeline



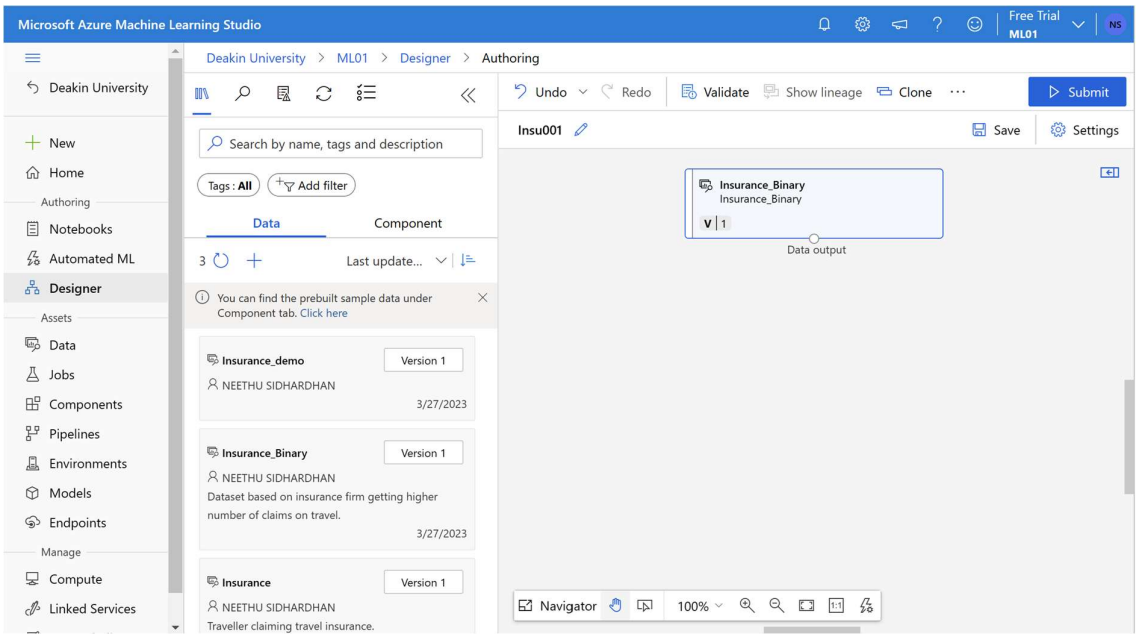
Step 6: Create a new pipeline



Step 7: Select the Data under Dataset

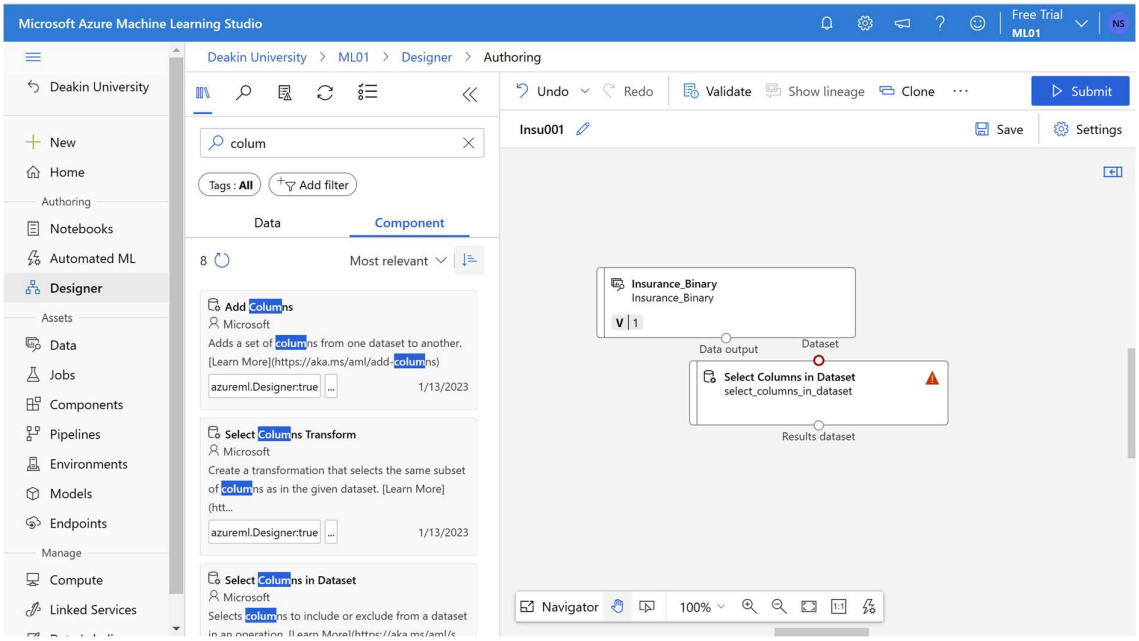


Step 8: Use the dataset under designer

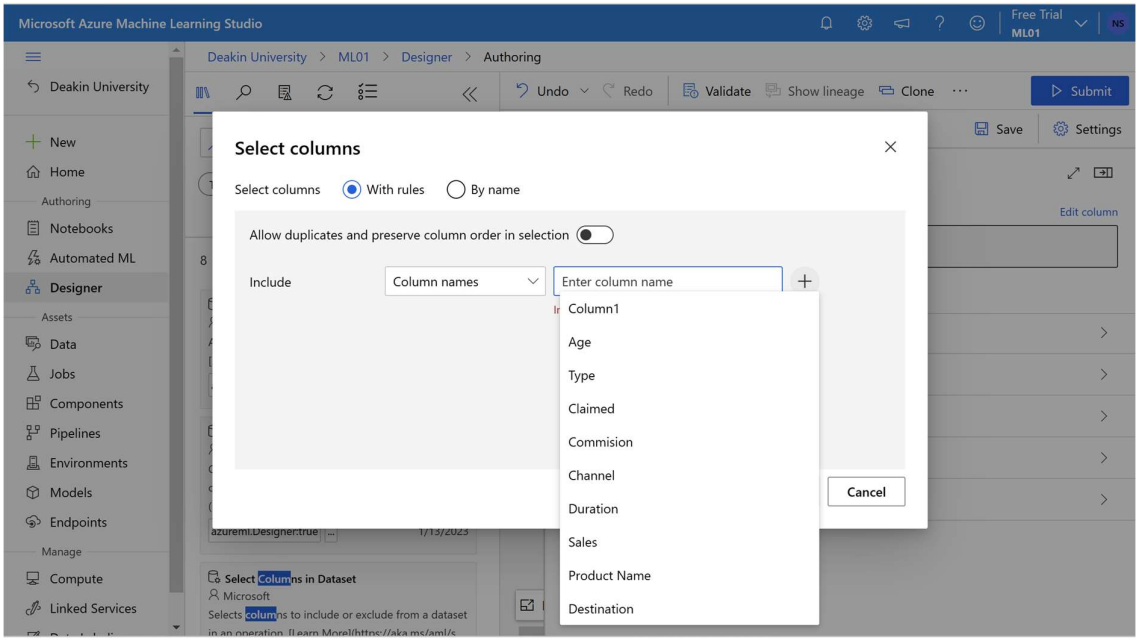


Step 9: Select the Components

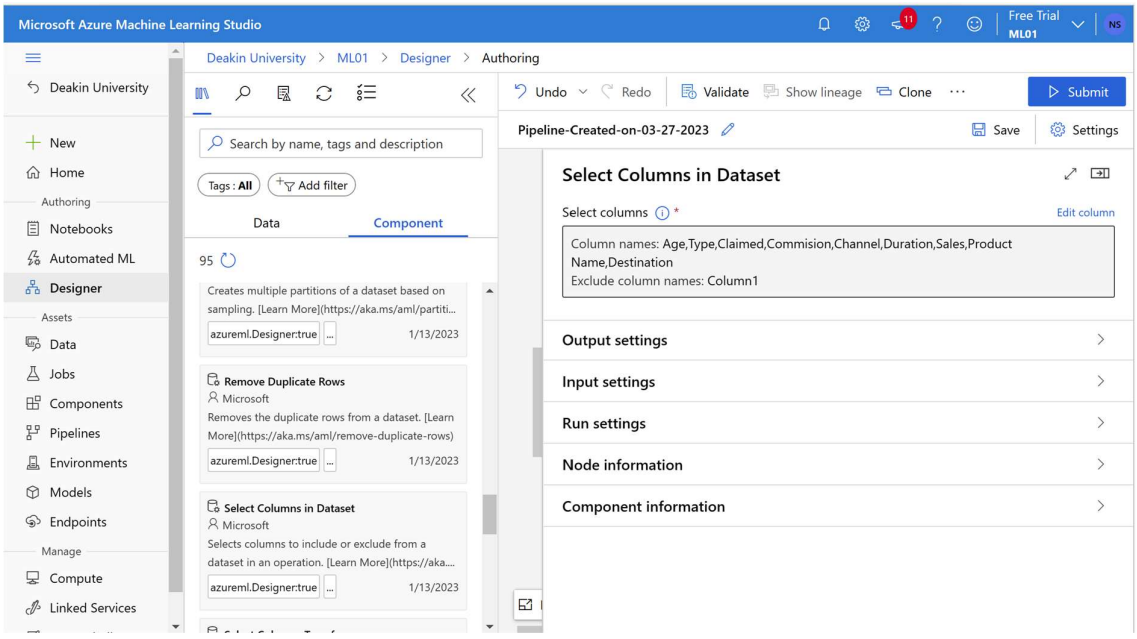
I. Select Columns in Dataset



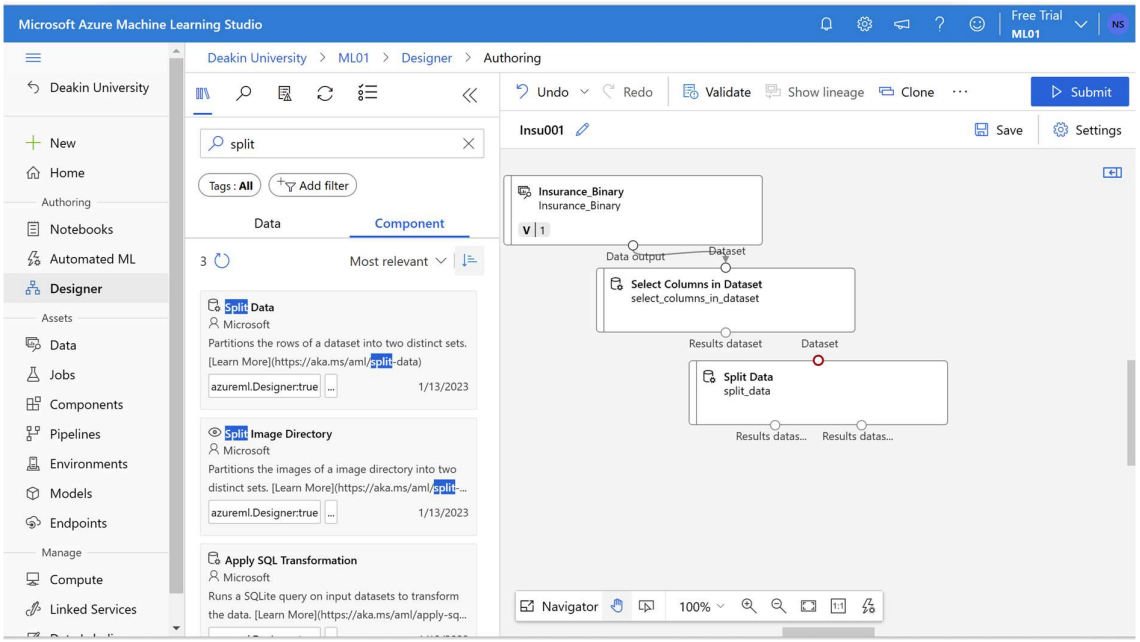
II. Select the columns in the dataset



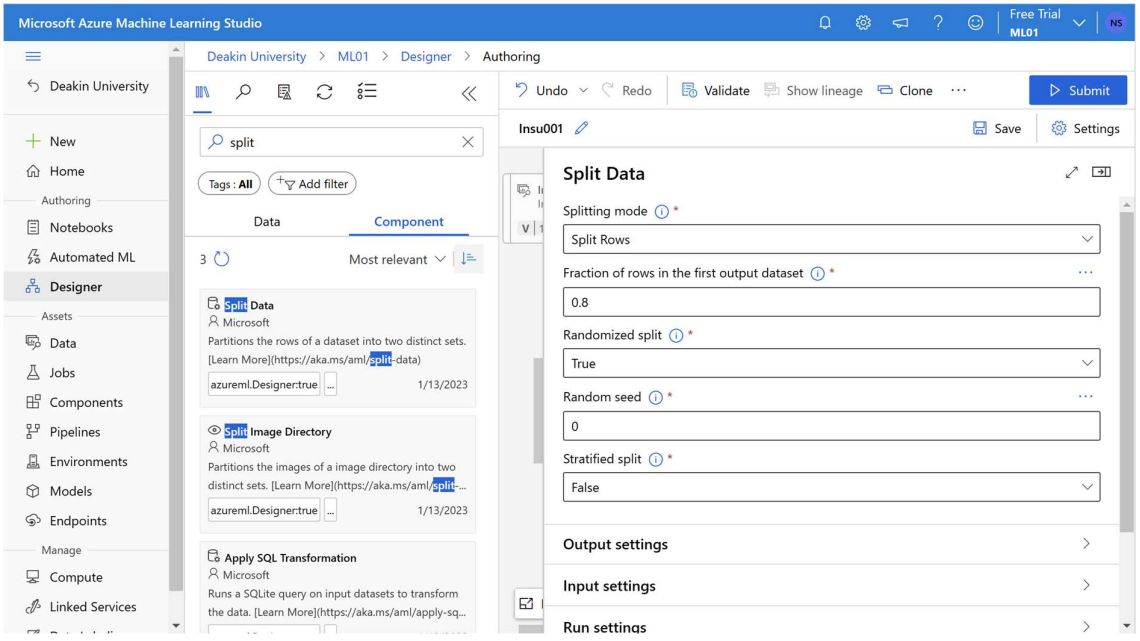
III. Columns selected



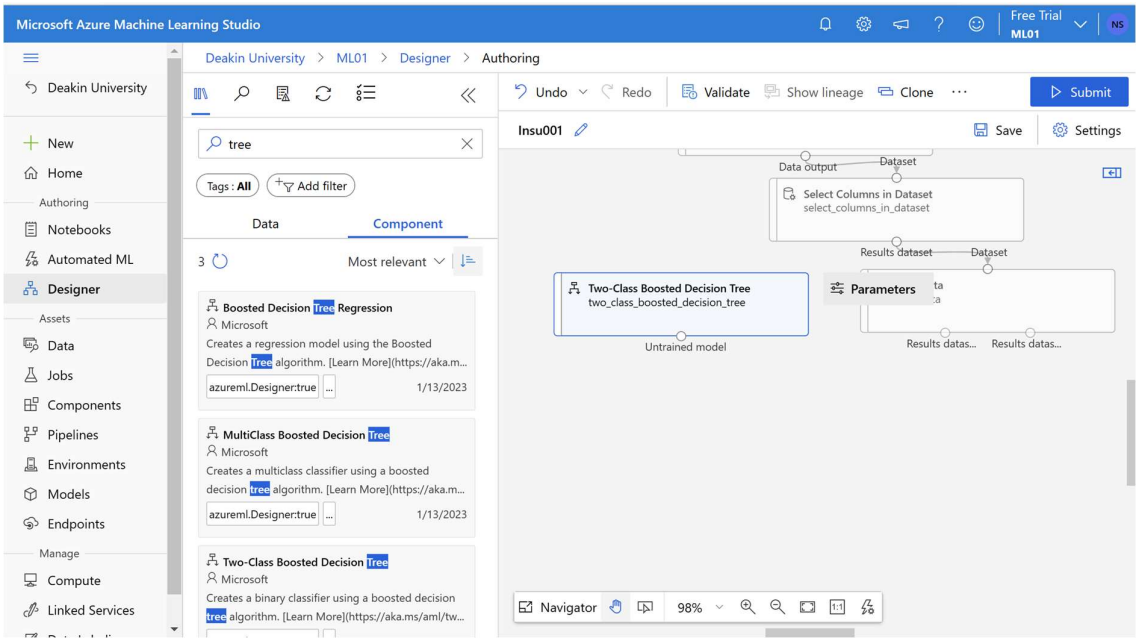
IV. Split the dataset into train and test



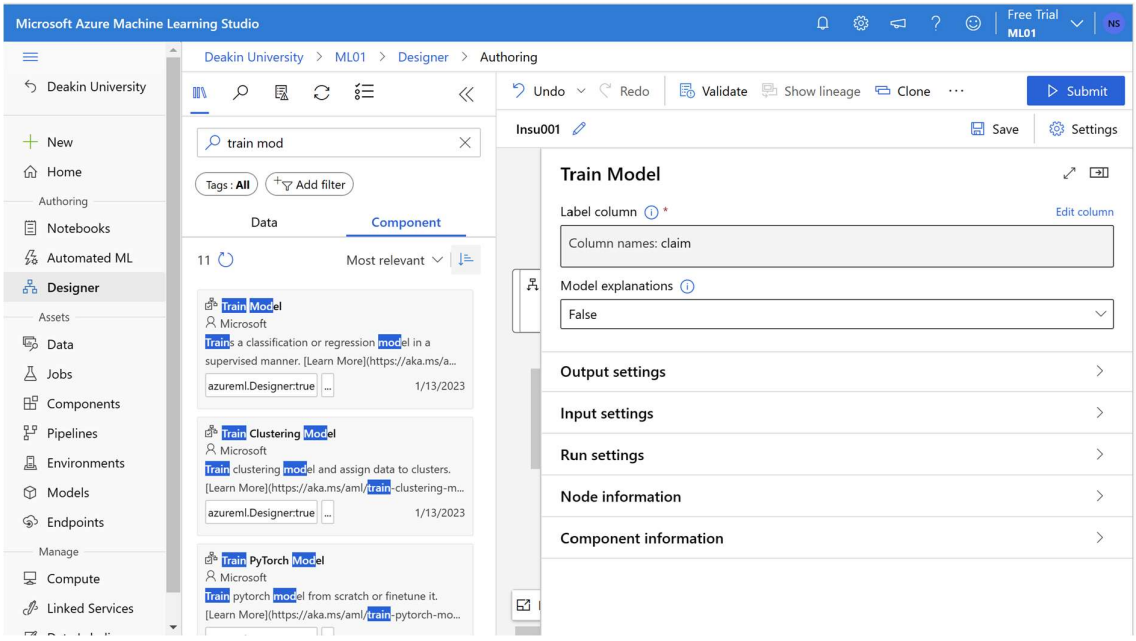
V. Select the parameter



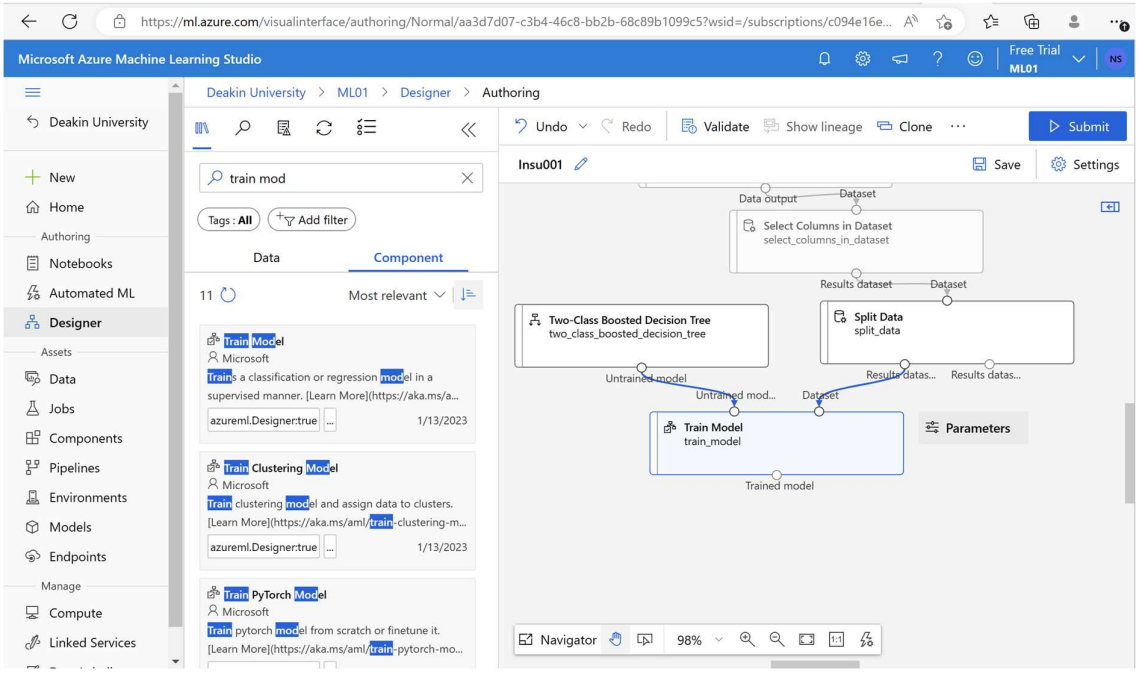
VI. Select the component : Two – Class Boosted Decision Tree



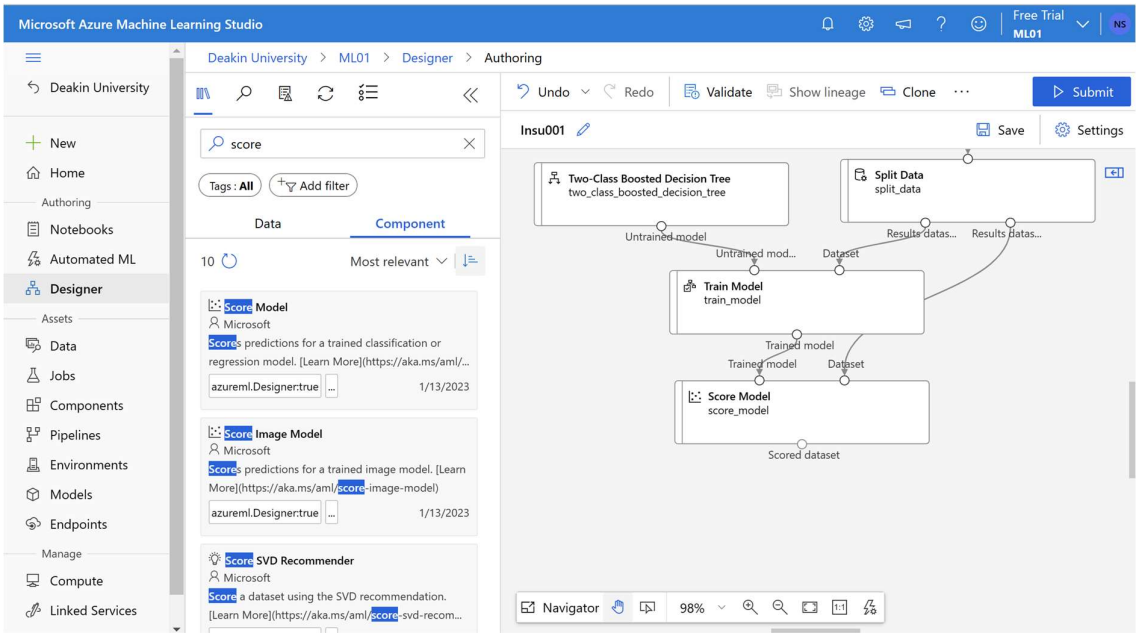
VII. Select Train Model and Connect the dataset with target parameter



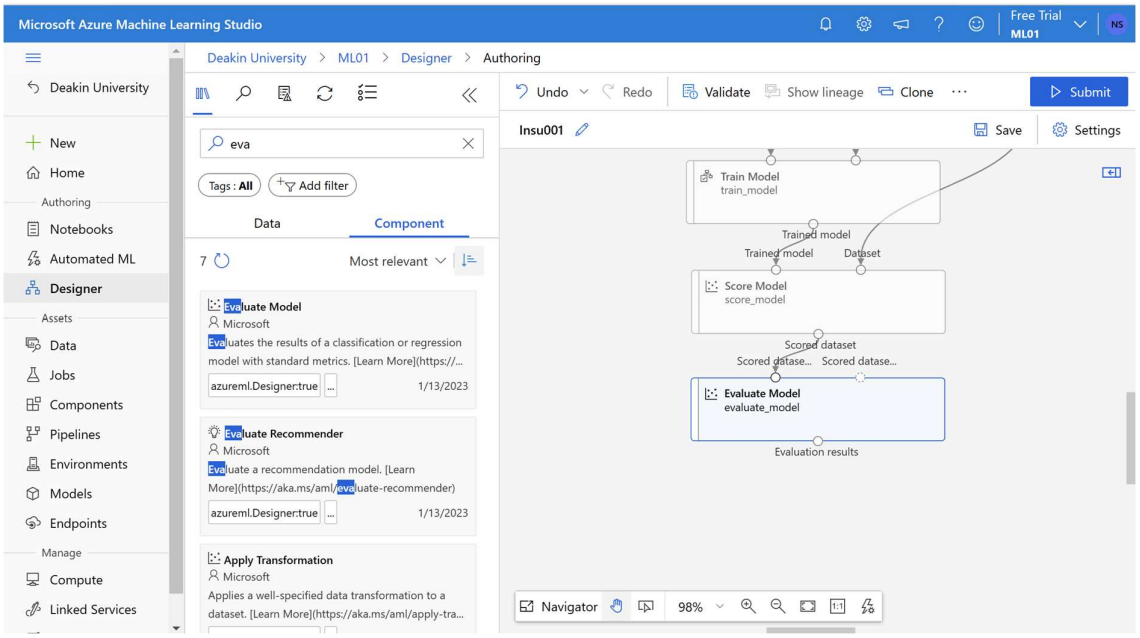
VIII. Connect the Train Model



IX. Select the component Score Model: Connect the train model and test model

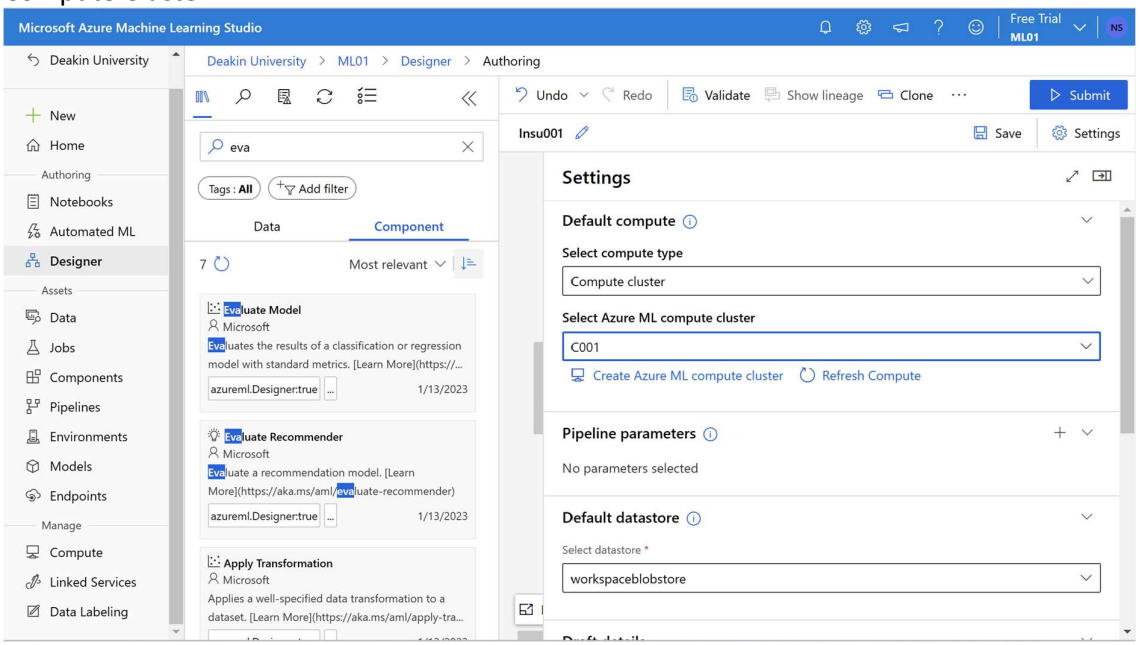


X. Select the component : Evaluate the model

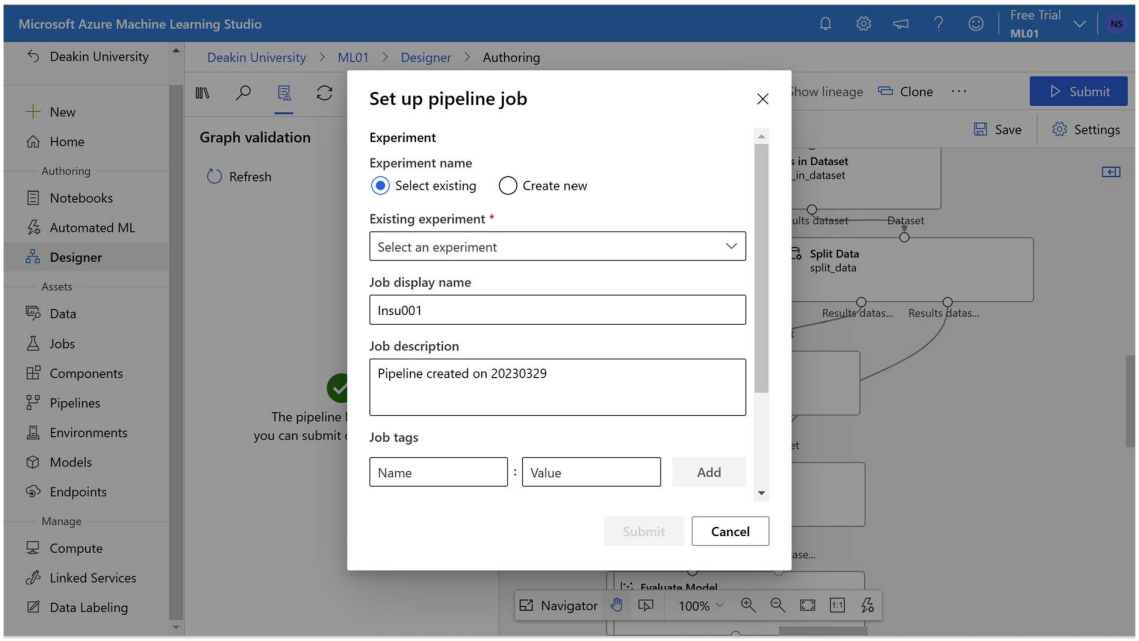


Save the Pipeline

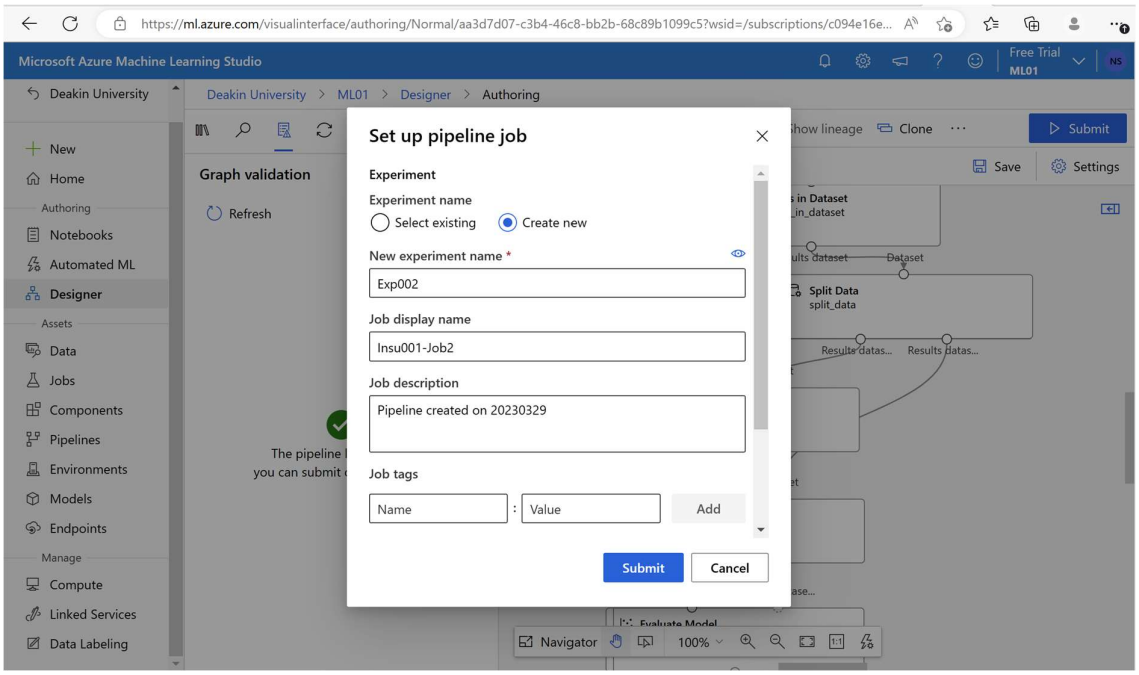
Before submit the pipeline -> Steetings> Select the Compute Type and Select the Azure ML Compute Cluster



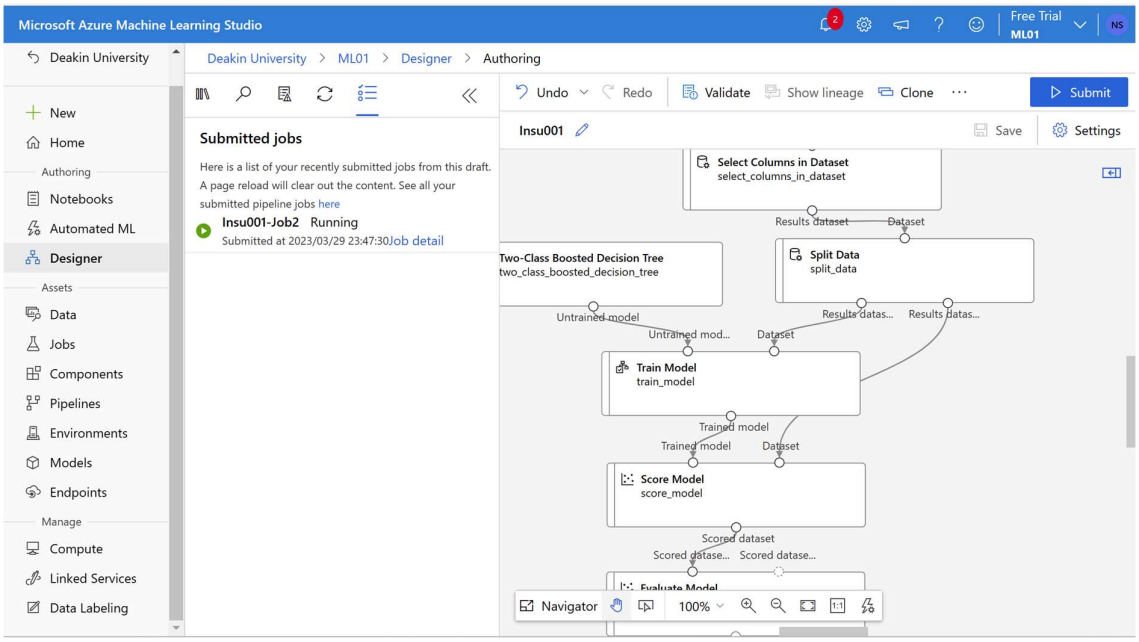
XI. Submit the pipeline and Set up pipeline Job



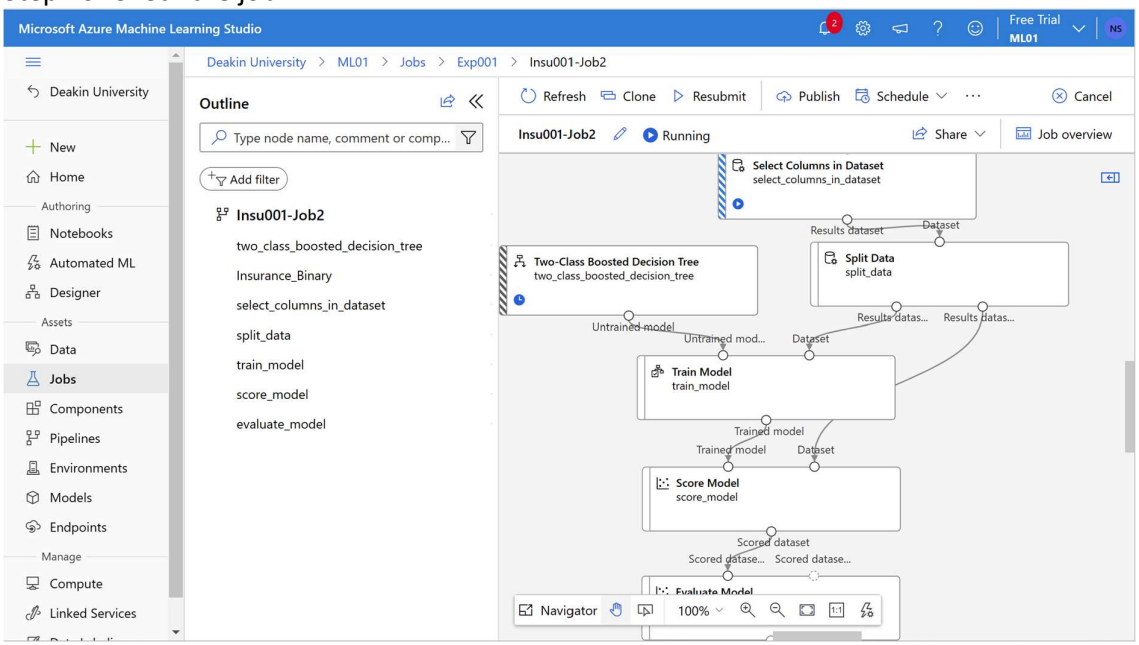
XII. Create new Pipeline Job



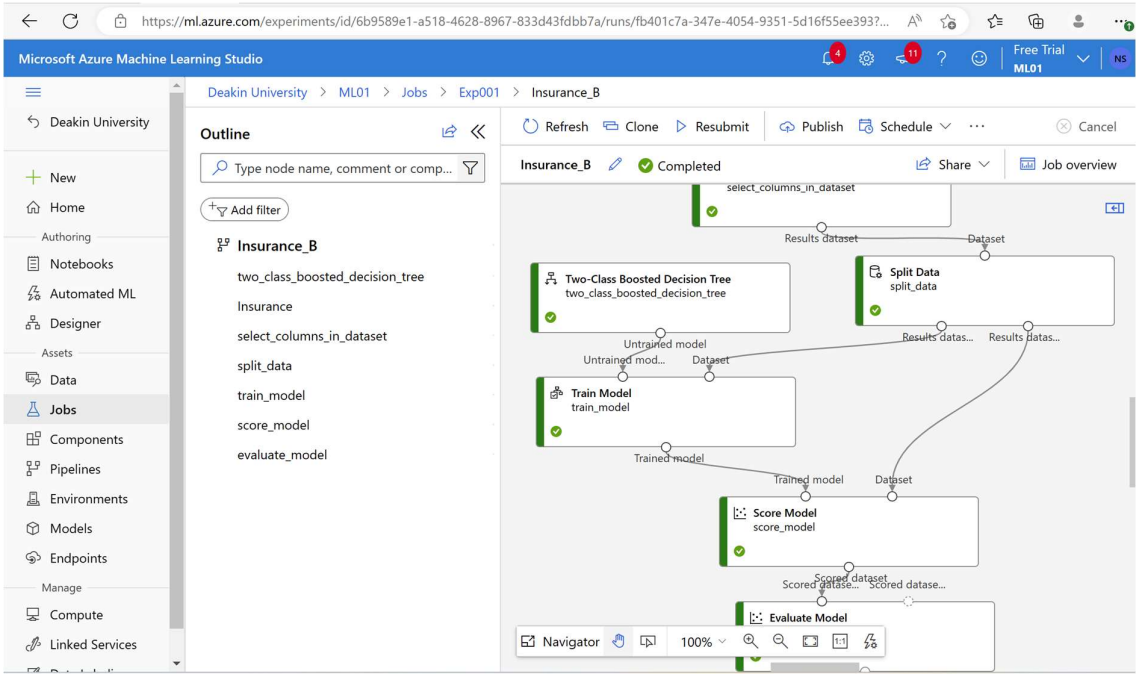
XIII. Submit the Job



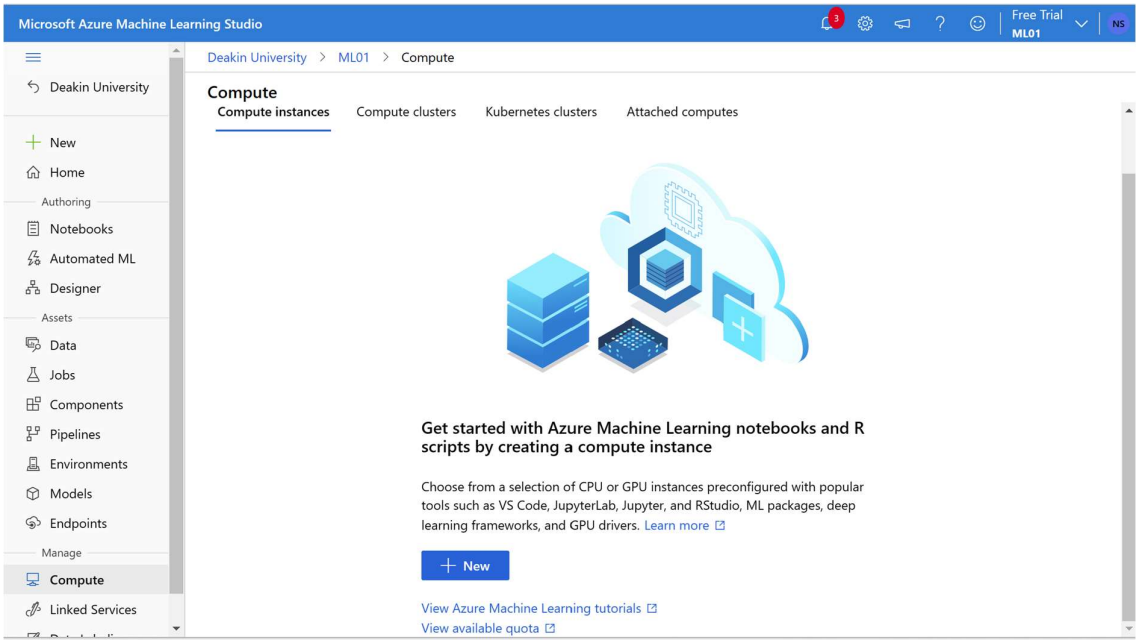
Step 10: Check the job



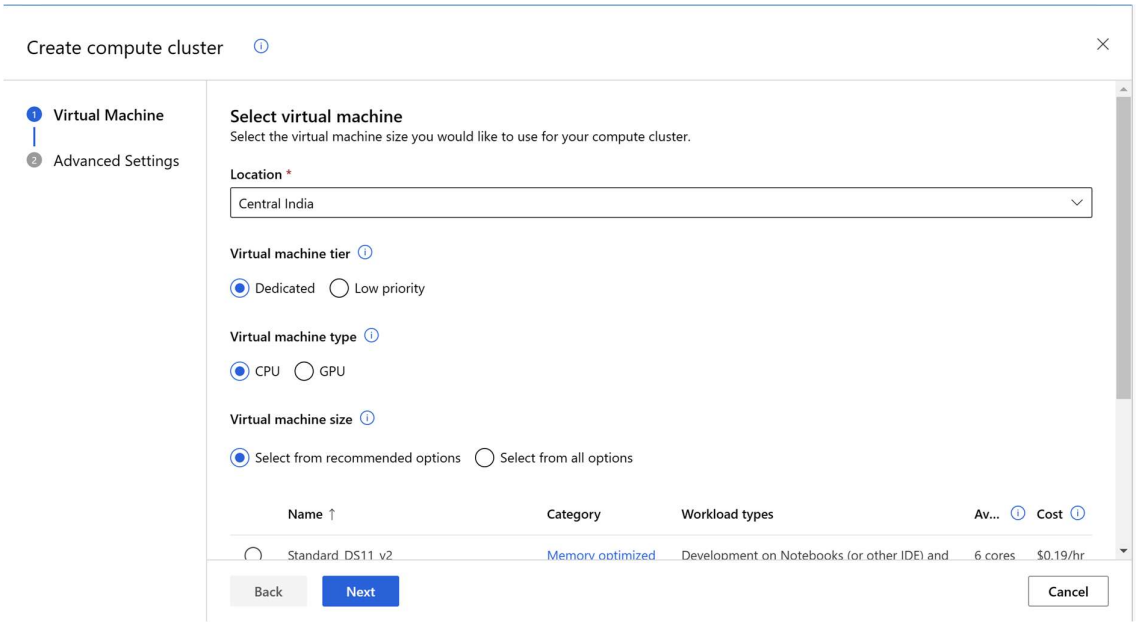
Step 11: Post completion of Job

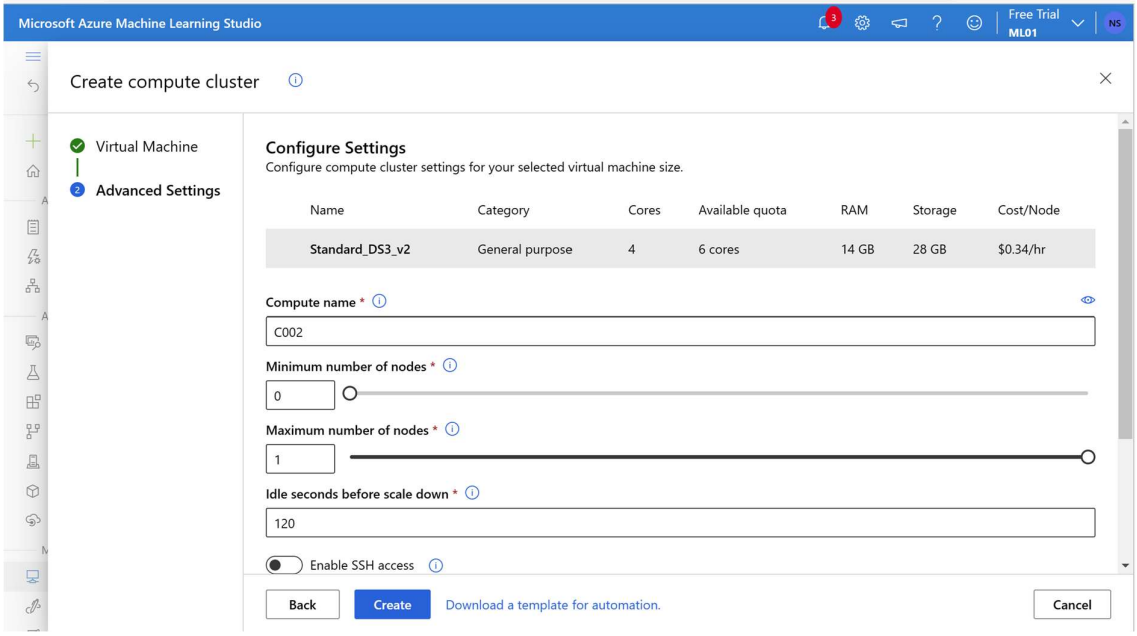


Step 12: Create Compute

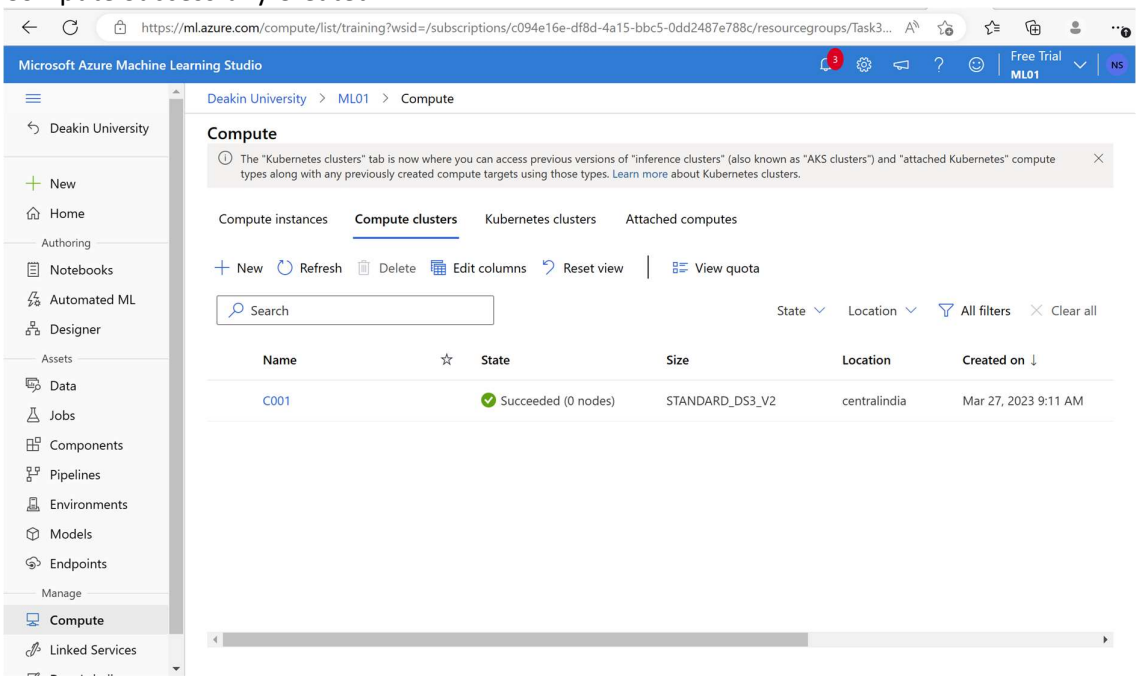


1. Select tab Compute Cluster> New



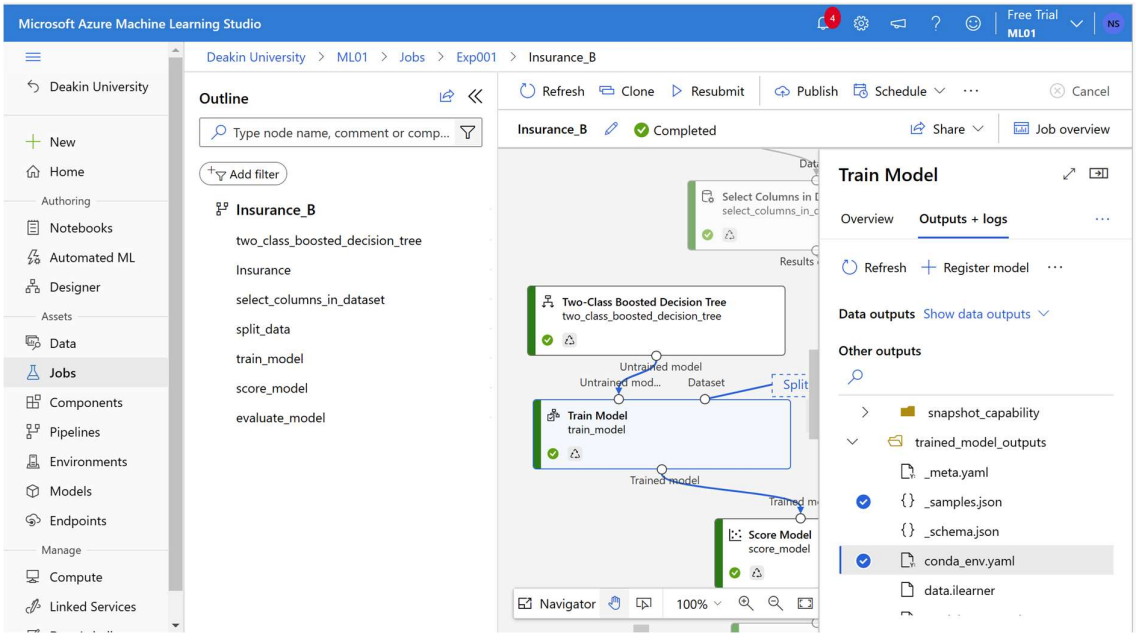


Compute Successfully Created

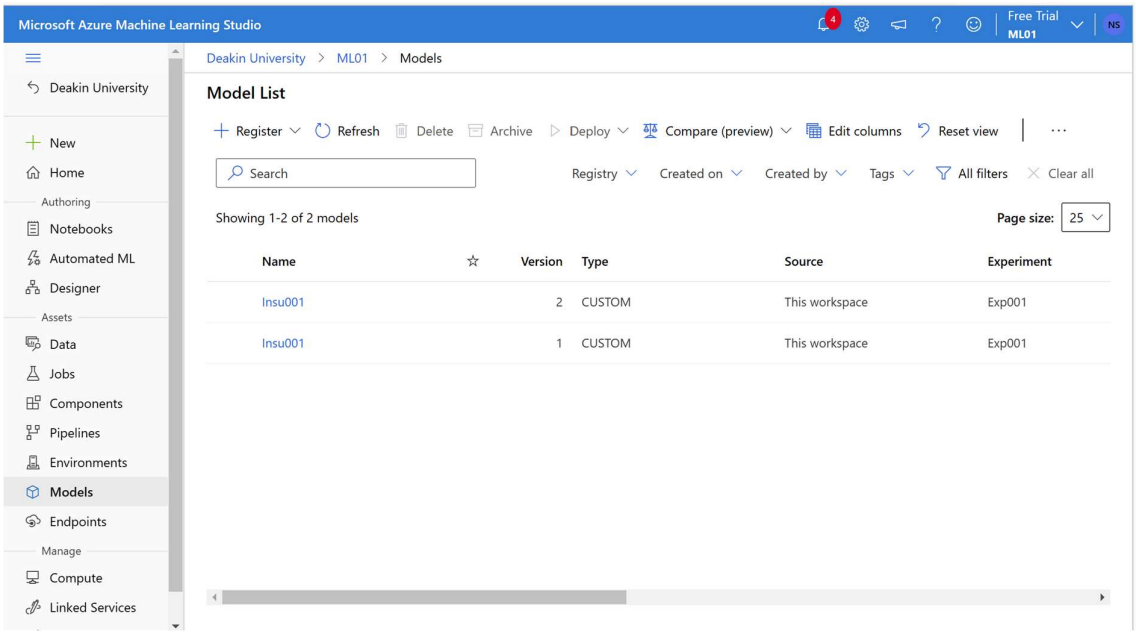


Step 13: Double click the Train Model – Output + logs

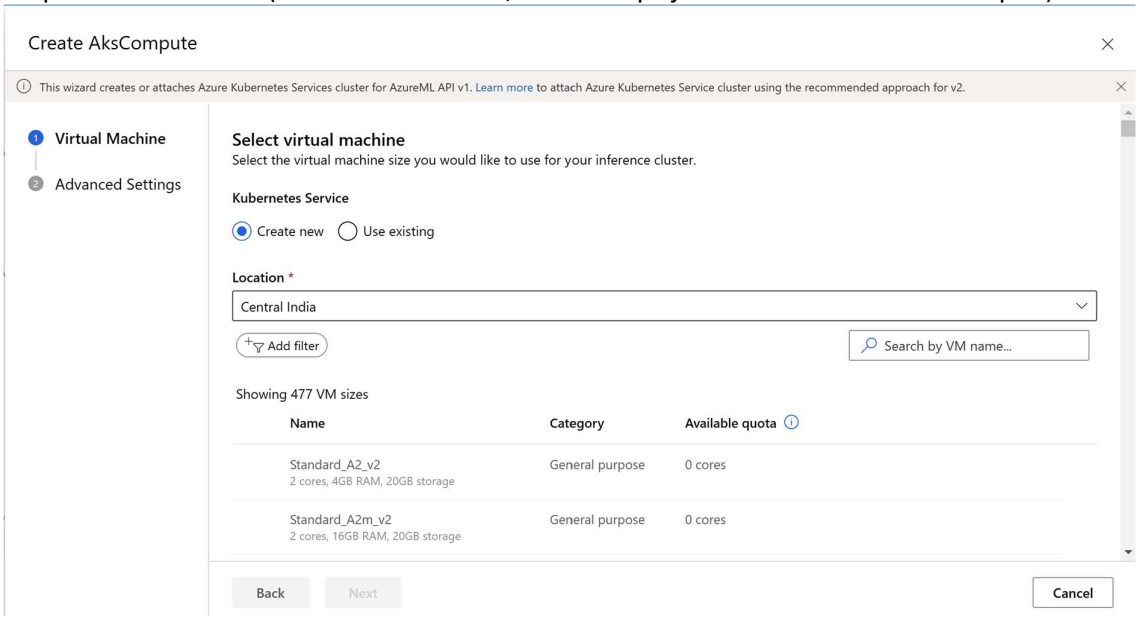
Download 3 files {}_sample.json ; conda_env.yaml ; PY score.py

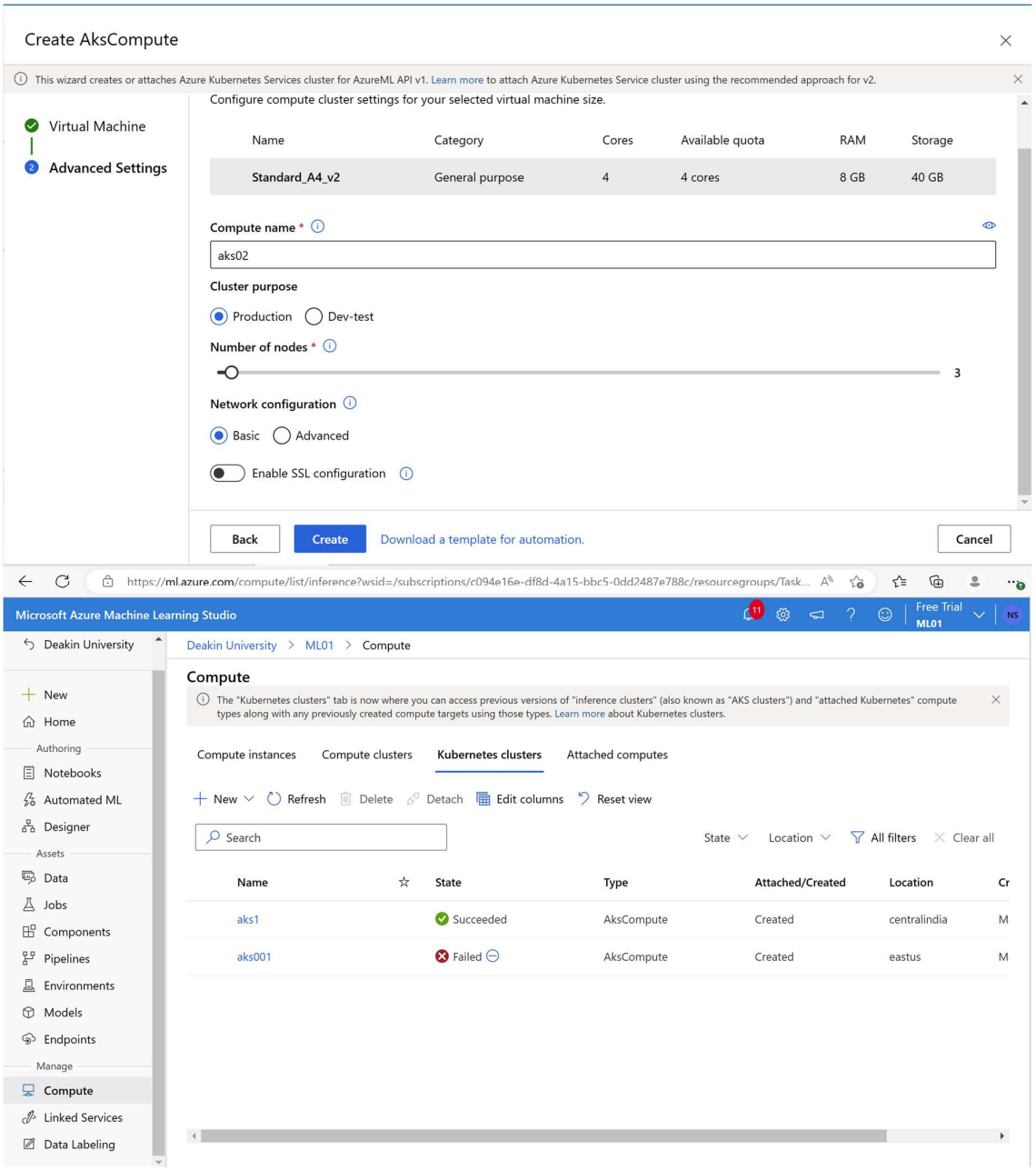


Step 14: Register the model



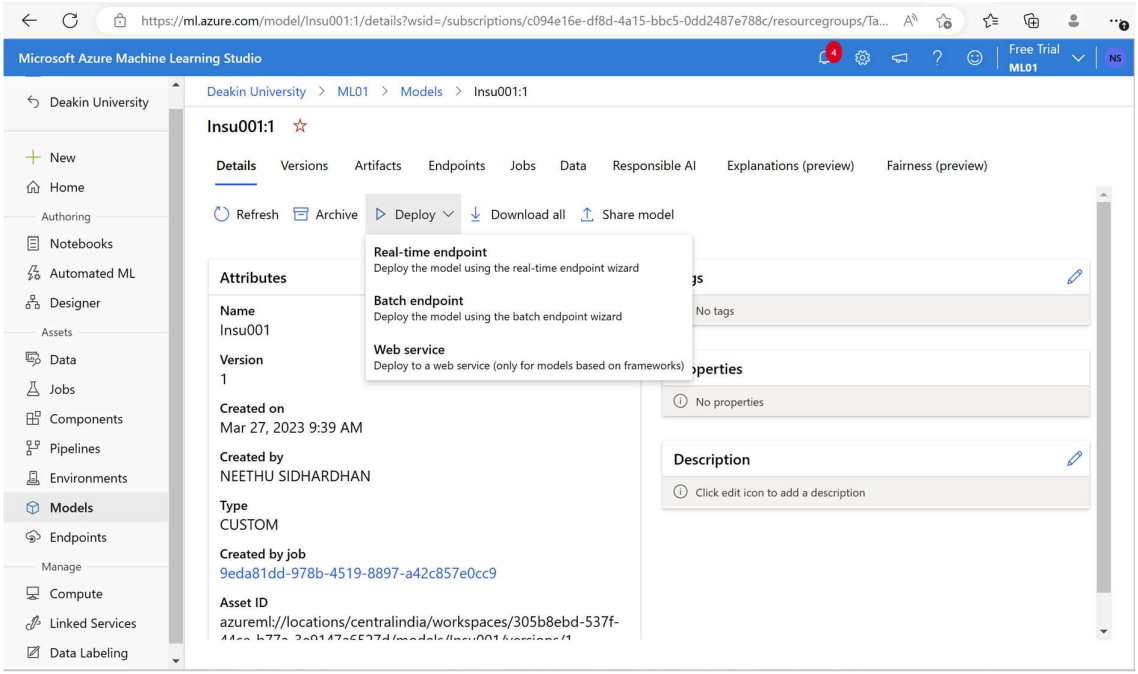
Step 15: Create AKS –(AKS1 was created , Below snips just for creation reference pics)

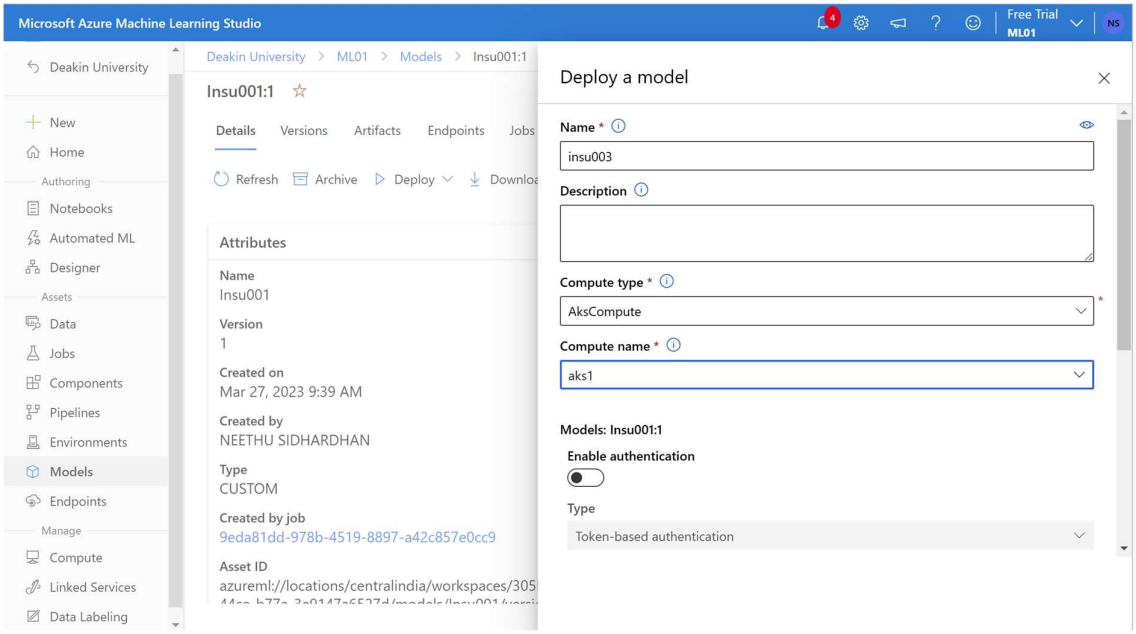


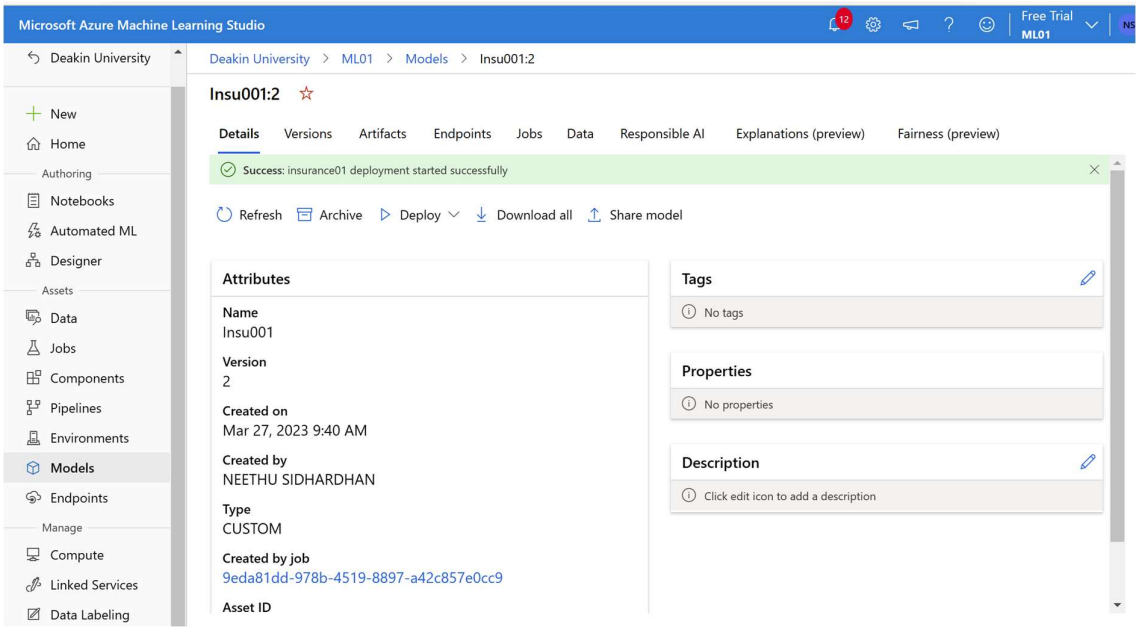

Create AksCompute
This wizard creates or attaches Azure Kubernetes Services cluster for AzureML API v1. Learn more to attach Azure Kubernetes Service cluster using the recommended approach for v2.
Virtual Machine
Advanced Settings
Configure compute cluster settings for your selected virtual machine size.
Name
Category
Cores
Available quota
RAM
Storage
Standard_A4_v2
General purpose
4
4 cores
8 GB
40 GB
Compute name *
aks02
Cluster purpose
Production
Dev-test
Number of nodes *
3
Network configuration
Basic
Advanced
Enable SSL configuration
Back
Create
Download a template for automation.
Cancel

https://ml.azure.com/compute/list/inference?wsid=/subscriptions/c094e16e-df8d-4a15-bbc5-0dd2487e788c/resourcegroups/Task...
Microsoft Azure Machine Learning Studio
Free Trial
ML01
Deakin University
Deakin University > ML01 > Compute
New
Home
Authoring
Notebooks
Automated ML
Designer
Assets
Data
Jobs
Components
Pipelines
Environments
Models
Endpoints
Manage
Compute
Linked Services
Data Labeling
Compute
The "Kubernetes clusters" tab is now where you can access previous versions of "inference clusters" (also known as "AKS clusters") and "attached Kubernetes" compute types along with any previously created compute targets using those types. Learn more about Kubernetes clusters.
Compute instances
Compute clusters
Kubernetes clusters
Attached computes
New
Refresh
Delete
Detach
Edit columns
Reset view
Search
State
Location
All filters
Clear all
Name
State
Type
Attached/Created
Location
aks1
Succeeded
AksCompute
Created
centralindia
aks001
Failed
AksCompute
Created
eastus

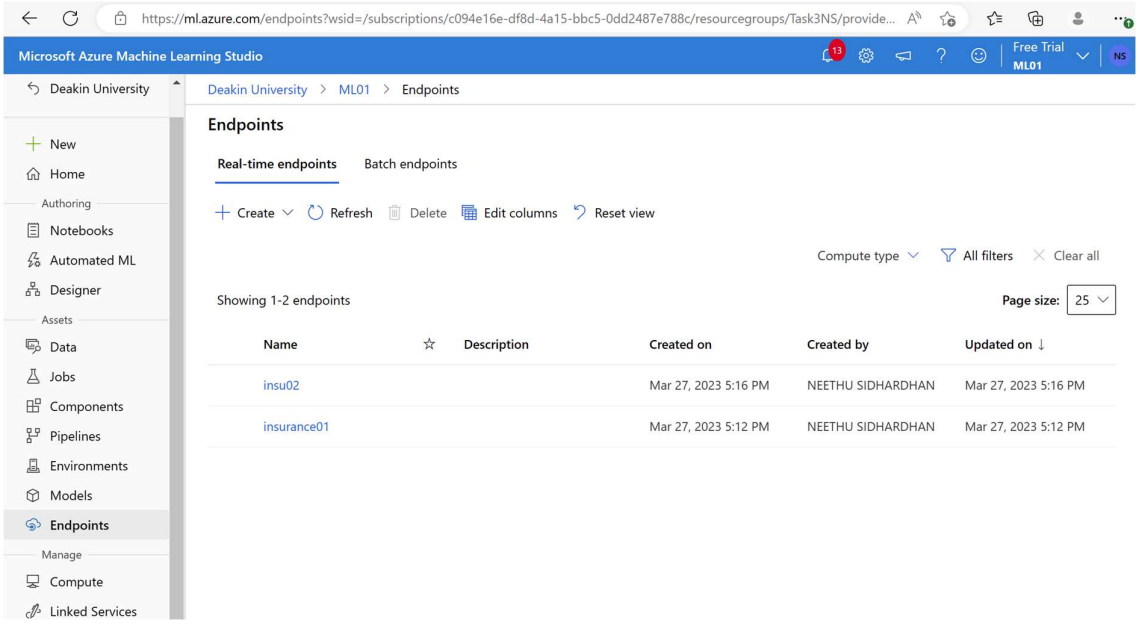
Step 16: Deploy the Model > Web service >

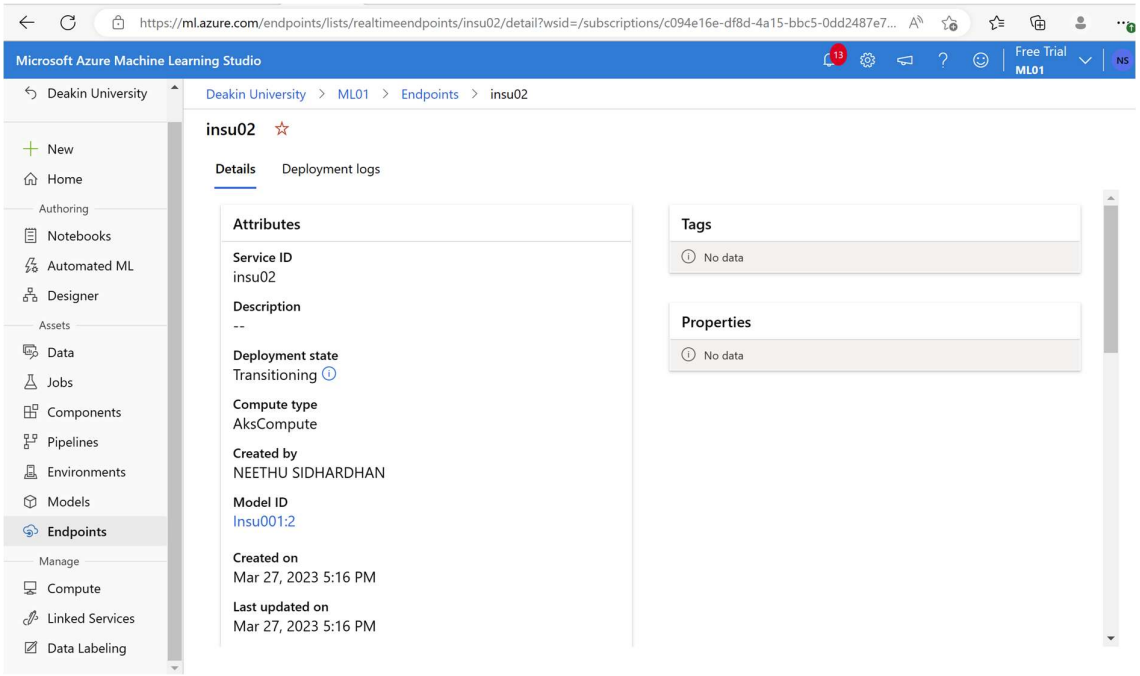




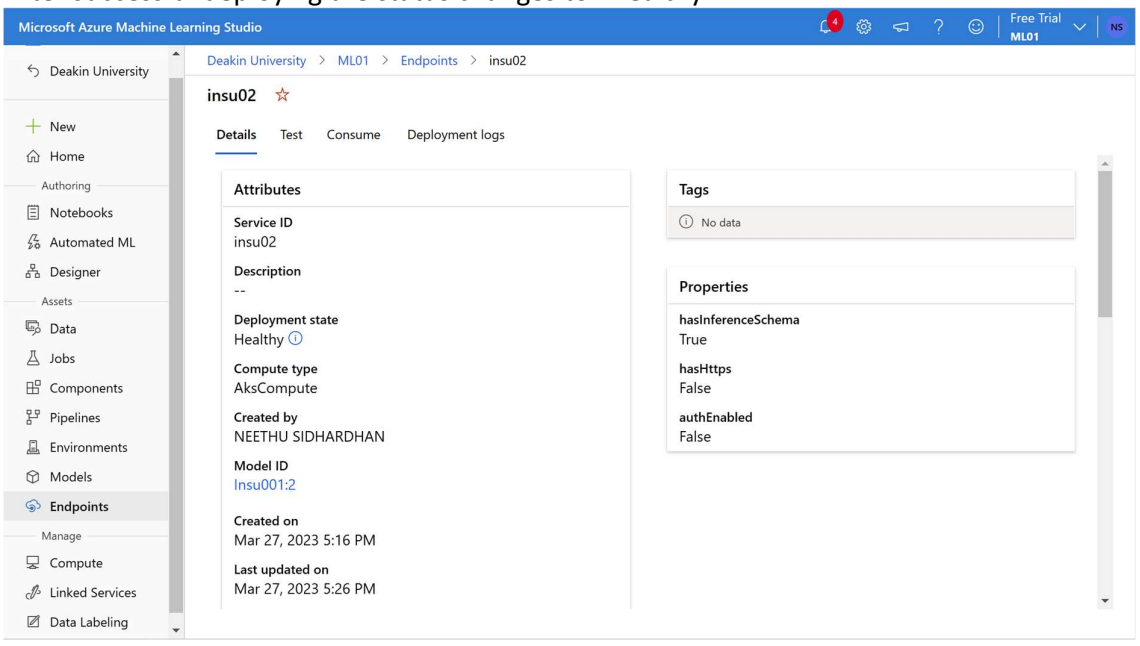


Step 17: After successful Deploying then check the end point

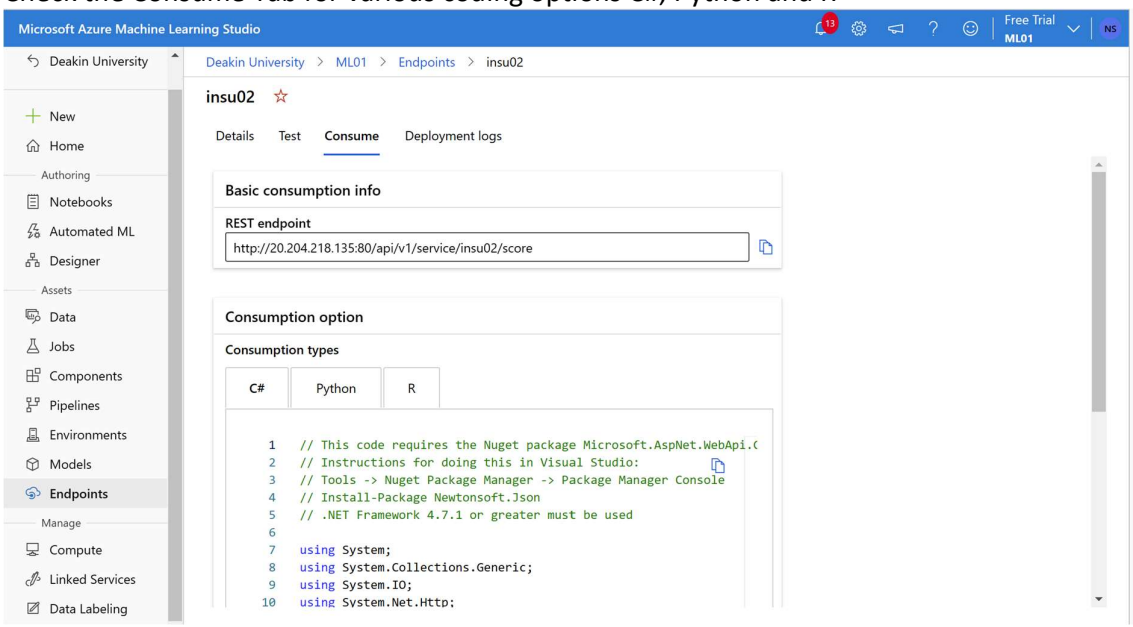




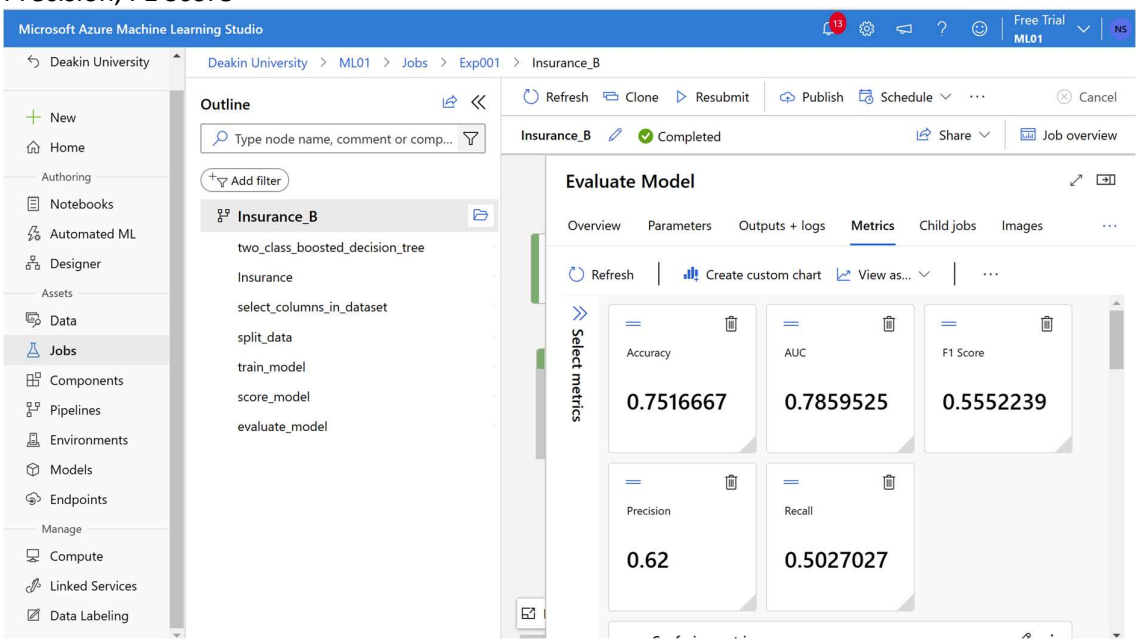
After successful deploying the status changes to “Healthy”



Check the Consume Tab for various coding options C#, Python and R



Step 18: Check the Evaluate Model in pipeline for Accuracy, Confusion Matrix, Recall, Precision, F1 Score



Evaluate Model

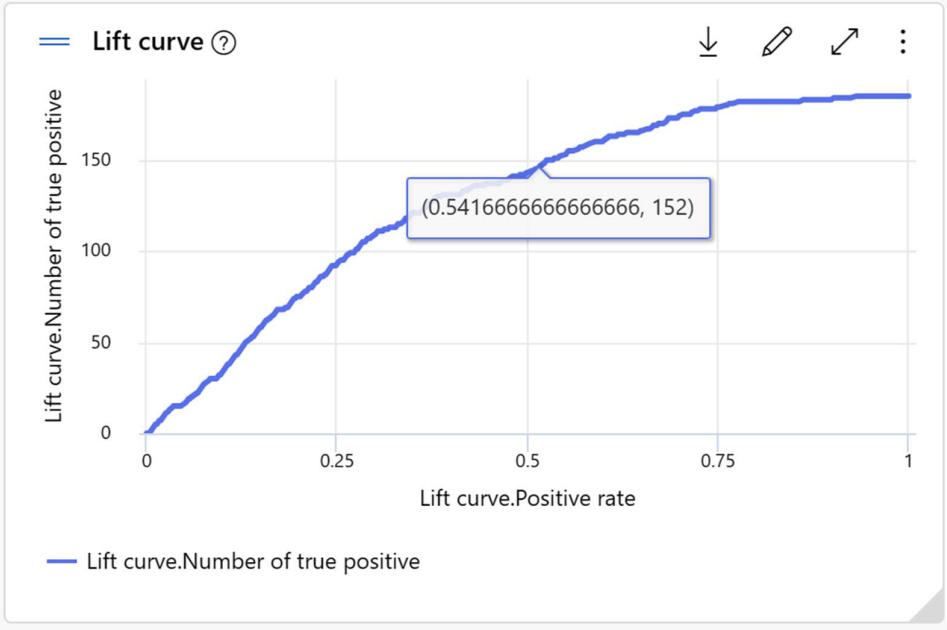
Overview | Parameters | Outputs + logs | **Metrics** | Child jobs | Images | ...

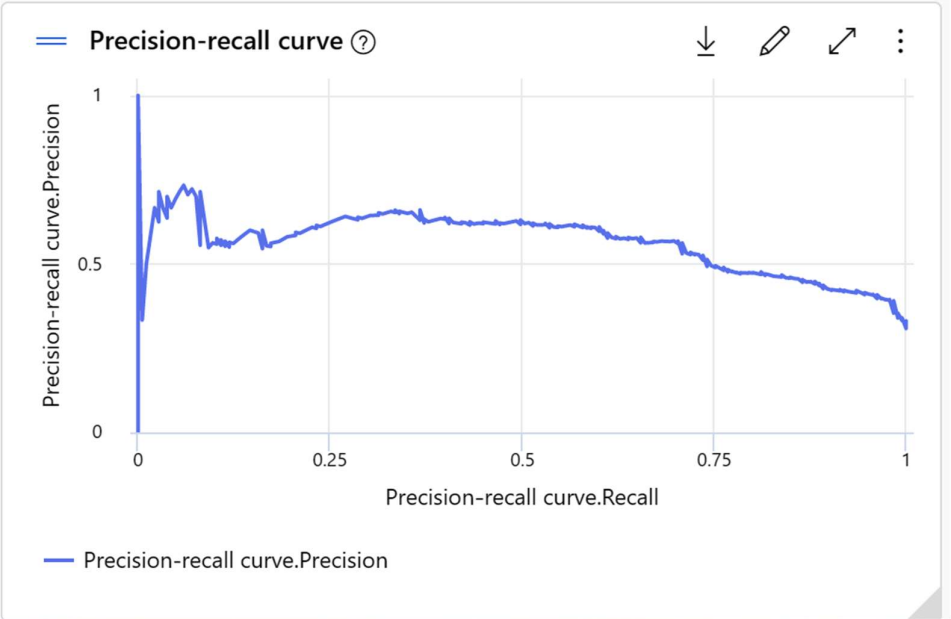
Refresh | Create custom chart | View as... | ...

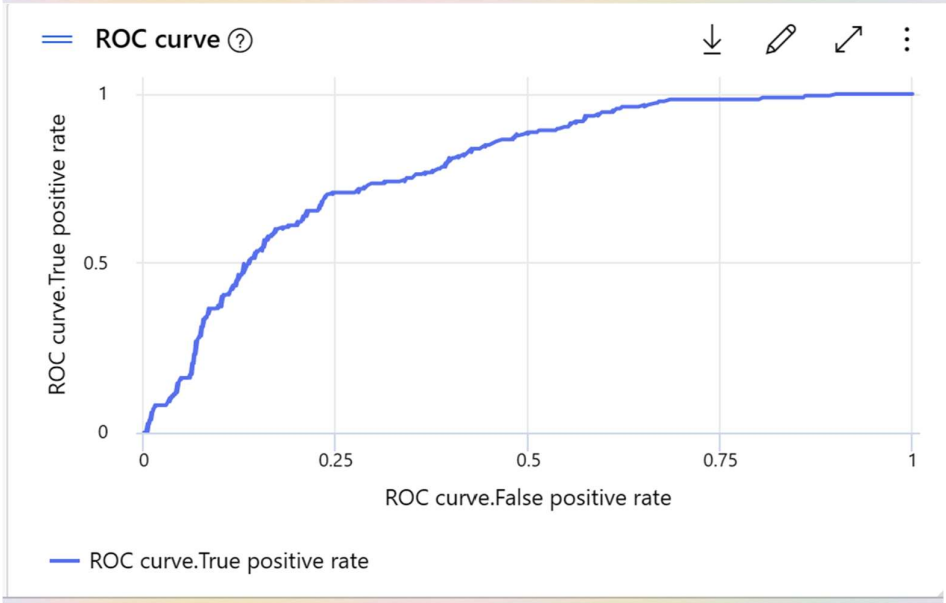
Select metrics

Accuracy	AUC	F1 Score
0.7516667	0.7859525	0.5552239

Precision	Recall
0.62	0.5027027







Bibliography

Anon., n.d. *Microsoft.* [Online]
Available at: https://learn.microsoft.com/en-us/azure/machine-learning/tutorial-pipeline-python-sdk
Nakisa, D. B., n.d. *Great Learning.* [Online]
Available at: https://olympus.mygreatlearning.com/courses/91262/pages/3-dot-1-model-execution-2?module_item_id=3833087