

tanishqagarg11 - Striver DP Series Printing Longest NLP Sentiment A Azure Machi Data - Azure AI Print Longest Inc ChatGPT

portal.azure.com/?Microsoft\_Azure\_Education\_correlationId=786c6a26-554c-45c7-b73a-4347c4e24afa8&Microsoft\_Azure\_Educati...

Microsoft Azure Search resources, services, and docs (G+/)

tanishqa21csu434@cse... THE NORTHCAP UNIVERSITY

All services > Azure Machine Learning >

## Azure Machine Learning

Create a machine learning workspace

Basics Networking Encryption Identity Tags Review + create

Resource details

Every workspace must be assigned to an Azure subscription, which is where billing happens. You use resource groups like folders to organize and manage resources, including the workspace you're about to create. [Learn more about Azure resource groups](#)

Subscription \*

Azure for Students

Resource group \*

(New) Hyperparameter

Create new

Workspace details

Configure your basic workspace settings like its storage connection, authentication, container, and more. [Learn more](#)

Name \*

hyperparameter

Region \*

Central India

Storage account \*

(new) hyperparameter1037326073

Create new

Review + create

< Previous

Next : Networking

Activate Windows

Go to Settings to activate Windows.

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All services > Azure Machine Learning >

## Azure Machine Learning

Create a machine learning workspace

Subscription \*

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Resource group \*

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Create new

Workspace details

Configure your basic workspace settings like its storage connection, authentication, container, and more. [Learn more](#)

Name \*

hyperparameter

Region \*

Central India

Storage account \*

(new) hyperparameter1037326073

Create new

Key vault \*

(new) hyperparameter8537513641

Create new

Application insights \*

(new) hyperparameter5043517252

Create new

Container registry

None

Review + create

< Previous

Next : Networking

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All services > Azure Machine Learning >

## Azure Machine Learning

Create a machine learning workspace

Basics **Networking** Encryption Identity Tags Review + create

### Network isolation

Choose the type of network isolation you need for your workspace, from not isolated at all to an entirely separate virtual network managed by Azure Machine Learning. [Learn more about managed network isolation](#)

☒ **Public**

- Workspace is accessed via public endpoint
- Compute can access public resources
- Outbound data movement is unrestricted

☐ **Private with Internet Outbound**

- Workspace is accessed via private endpoint
- Compute can access private resources
- Outbound data movement is unrestricted

☐ **Private with Approved Outbound**

- Workspace is accessed via private endpoint
- Compute can access allowlisted resources only
- Outbound data movement is restricted to approved targets

**Review + create**

< Previous

Next : Encryption

Activate Windows  
Go to Settings to activate Windows.

All services > Azure Machine Learning >

## Azure Machine Learning

Create a machine learning workspace

Basics Networking **Encryption** Identity Tags Review + create

### Data encryption

Azure Machine Learning service stores metrics and metadata in an Azure Cosmos DB instance where all data is encrypted at rest. By default, the data is encrypted with Microsoft-managed keys. You may choose to bring your own (customer-managed) keys.

Encryption type ☒ Microsoft-managed keys ☐ Customer-managed keys

⚠ When using a customer-managed key, the costs for your subscription will be higher because of the additional resources in your subscription. To estimate the cost, use the Azure pricing calculator. To learn more, see [Use customer-managed keys - Azure Machine Learning | Microsoft Docs](#)

**Review + create**

< Previous

Next : Identity

Activate Windows  
Go to Settings to activate Windows.

tanishqagarg11 - Lee | Striver DP Series : Dy | Printing Longest Incr | NLP Sentiment Analy | Print Longest Incre | Azure Machine L | Azure Project Help | + | - | x

portal.azure.com/?Microsoft\_Azure\_Education\_correlationId=786c6a26-554c-45c7-b73a-4347c4e24afa&Microsoft\_Azure\_Educati... | VPN

Microsoft Azure | Search resources, services, and docs (G+)

All services > Azure Machine Learning >

## Azure Machine Learning

Create a machine learning workspace

Validation passed

Basics Networking Encryption Identity **Tags** Review + create

Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more about tags](#)

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name Value

environment : development

Review + create < Previous Next : Review + create

Activate Windows  
Go to Settings to activate Windows.

Windows taskbar: Type here to search, taskbar icons, Earnings upcoming, ENG IN, 21:01 08-07-2024

## COMPUTE INSTANCE

tanishqagarg1 | Striver DP Seri | Printing Longe | NLP Sentimen | Print Longest | hyperparameter | Notebook | Azure Project | (14) Deploying | + | - | x

ml.azure.com/fileexplorerAzNB?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegroups/Hyperparameter/... | VPN

Azure AI | Machine Learning Studio | Azure for Students hyperparameter

### Create compute instance

Assets | Review

☒ CPU ☐ GPU

Virtual machine size

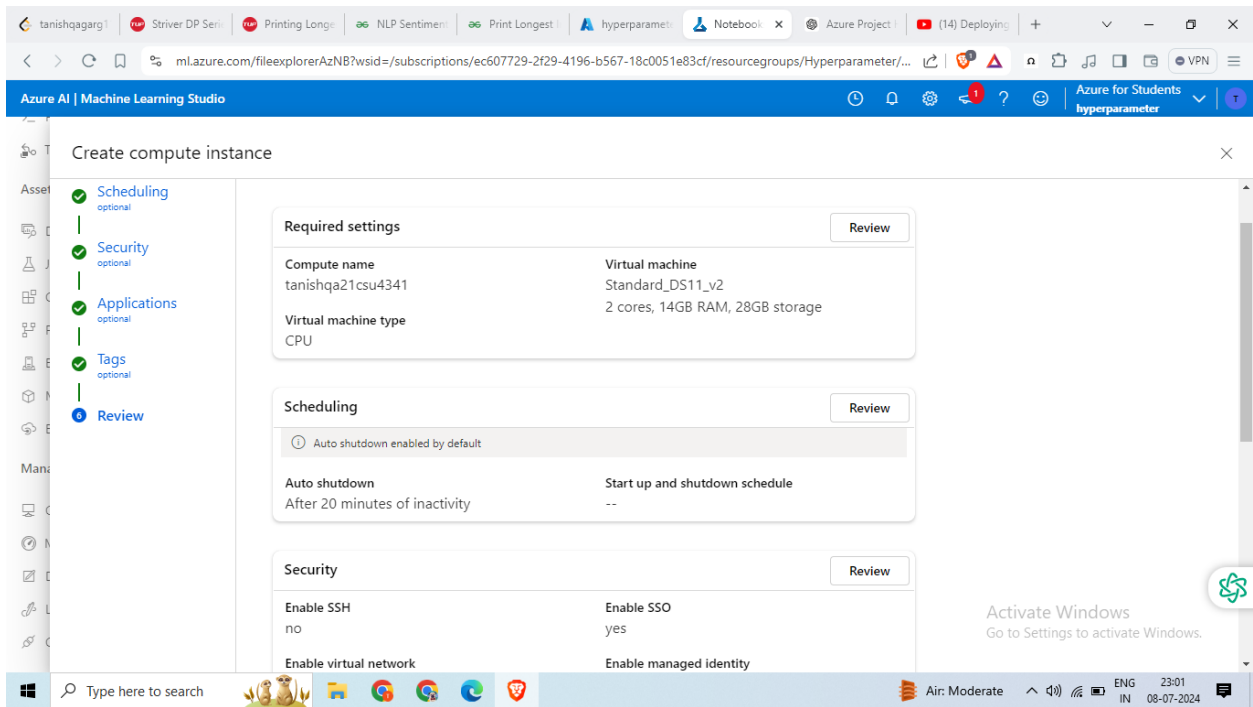
☒ Select from recommended options ☐ Select from all options

Name ↑	Category	Workload types	Available quota ⓘ	Cost ⓘ
<input checked="" type="radio"/> Standard_DS11_v2 2 cores, 14GB RAM, 28GB storage	Memory optimized	Development on Notebooks (or other IDE) and light weight testing	6 cores	\$0.19/hr
<input type="radio"/> Standard_DS3_v2 4 cores, 14GB RAM, 28GB storage	General purpose	Classical ML model training on small datasets	6 cores	\$0.34/hr
<input type="radio"/> Standard_E4ds_v4 4 cores, 32GB RAM, 150GB storage	Memory optimized	Data manipulation and training on medium-sized datasets (1-10GB)	4 cores	\$0.30/hr
<input type="radio"/> Standard_F4s_v2 4 cores, 8GB RAM, 32GB storage	Compute optimiz...	Data manipulation and training on large datasets (>10 GB)	16 cores	\$0.17/hr

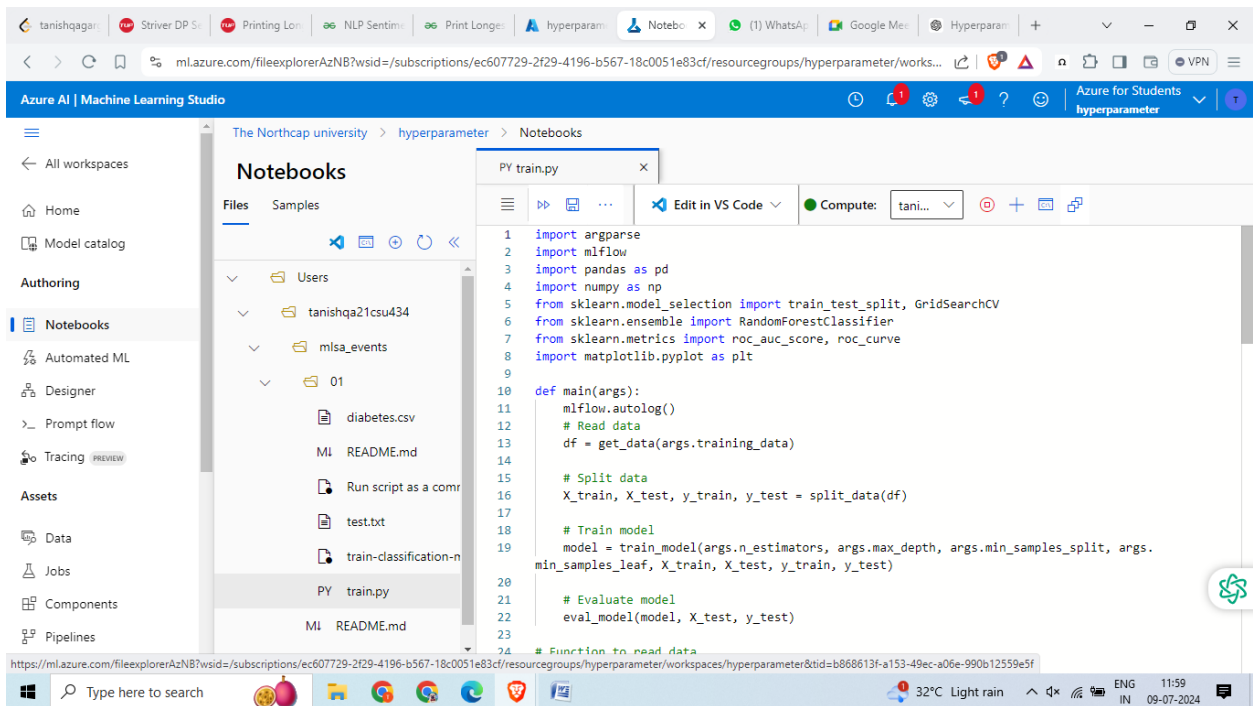
Review + Create Back Next

Activate Windows  
Go to Settings to activate Windows.

Windows taskbar: Type here to search, taskbar icons, Air: Moderate, ENG IN, 23:01 08-07-2024



## Code screenshot



tanishqagar: Striver DP S... Printing Long... NLP Sentim... Print Longe... hyperparam: Notebo: x (1) What... Google Me... Hyperparam: +

ml.azure.com/fileexplorerAzN8?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegroups/hyperparameter/works...

Azure AI | Machine Learning Studio

The Northcap university > hyperparameter > Notebooks

Notebooks

Files Samples

Users

tanishqa21csu434

mlsa\_events

01

diabetes.csv

MI README.md

Run script as a com...

test.txt

train-classification-n

PY train.py

MI README.md

PY train.py

```
24 # Function to read data
25 def get_data(path):
26     print("Reading data...")
27     df = pd.read_csv(path)
28     return df
29
30 # Function to split data
31 def split_data(df):
32     print("Splitting data...")
33     X = df[['Pregnancies', 'PlasmaGlucose', 'DiastolicBloodPressure', 'TricepsThickness',
34            'SerumInsulin', 'BMI', 'DiabetesPedigree', 'Age']].values
35     y = df['Diabetic'].values
36     X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.30, random_state=0)
37     return X_train, X_test, y_train, y_test
38
39 # Function to train model
40 def train_model(n_estimators, max_depth, min_samples_split, min_samples_leaf, X_train, X_test,
41                y_train, y_test):
42     print("Training model...")
43     param_grid = {
44         'n_estimators': n_estimators,
45         'max_depth': max_depth,
46         'min_samples_split': min_samples_split,
47         'min_samples_leaf': min_samples_leaf
48     }
```

tanishqagar: Striver DP S... Printing Long... NLP Sentim... Print Longe... hyperparam: Notebo: x (1) What... Google Me... Hyperparam: +

ml.azure.com/fileexplorerAzN8?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegroups/hyperparameter/works...

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The Northcap university > hyperparameter > Notebooks

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MI README.md

PY train.py

```
45     'min_samples_leaf': min_samples_leaf
46 }
47
48 grid_search = GridSearchCV(RandomForestClassifier(random_state=0), param_grid, cv=5,
49                             scoring='roc_auc')
50 grid_search.fit(X_train, y_train)
51 best_model = grid_search.best_estimator_
52 return best_model
53
54 # Function to evaluate model
55 def eval_model(model, X_test, y_test):
56     # Evaluate accuracy
57     y_hat = model.predict(X_test)
58     acc = np.average(y_hat == y_test)
59     print('Accuracy:', acc)
60
61 # Evaluate AUC
62 y_scores = model.predict_proba(X_test)
63 auc = roc_auc_score(y_test, y_scores[:,1])
64 print('AUC:', auc)
65
66 # Plot ROC curve
67 fpr, tpr, thresholds = roc_curve(y_test, y_scores[:,1])
68 fig = plt.figure(figsize=(6, 4))
69 plt.plot([0, 1], [0, 1], 'k--')
70 plt.plot(fpr, tpr)
```

tanishqagar: Striver DP S... Printing Lon... NLP Sentim... Print Longe... hyperparam: Notebo: x (1) WhatsAp... Google Me... Hyperparam: +

ml.azure.com/fileexplorerAzN8?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegroups/hyperparameter/works...

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The Northcap university > hyperparameter > Notebooks

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ML README.md

Run script as a comr

test.txt

train-classification-n

PY train.py

ML README.md

Environment: tani...

```
64
65
66 # Plot ROC curve
67 fpr, tpr, thresholds = roc_curve(y_test, y_scores[:,1])
68 fig = plt.figure(figsize=(6, 4))
69 plt.plot([0, 1], [0, 1], 'k--')
70 plt.plot(fpr, tpr)
71 plt.xlabel('False Positive Rate')
72 plt.ylabel('True Positive Rate')
73 plt.title('ROC Curve')
74
75 def parse_args():
76     parser = argparse.ArgumentParser()
77     parser.add_argument("--training_data", dest='training_data', type=str)
78     parser.add_argument("--n_estimators", dest='n_estimators', type=int, nargs='+', default=[100])
79     parser.add_argument("--max_depth", dest='max_depth', type=int, nargs='+', default=[None])
80     parser.add_argument("--min_samples_split", dest='min_samples_split', type=int, nargs='+',
81                         default=[2])
82     parser.add_argument("--min_samples_leaf", dest='min_samples_leaf', type=int, nargs='+', default=
83                         [1])
84     args = parser.parse_args()
85     return args
86
87 if __name__ == "__main__":
88     print("\n\n")
89     print("***** 60")
90     args = parse_args()
91     main(args)
92     print("***** 60")
93     print("\n\n")
```

tanishqagar: Striver DP S... Printing Lon... NLP Sentim... Print Longe... hyperparam: Notebo: x (1) WhatsAp... Google Me... Hyperparam: +

ml.azure.com/fileexplorerAzN8?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegroups/hyperparameter/works...

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ML README.md

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```
68 plt.plot([0, 1], [0, 1], 'k--')
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78     parser.add_argument("--max_depth", dest='max_depth', type=int, nargs='+', default=[None])
79     parser.add_argument("--min_samples_split", dest='min_samples_split', type=int, nargs='+',
80                         default=[2])
81     parser.add_argument("--min_samples_leaf", dest='min_samples_leaf', type=int, nargs='+', default=
82                         [1])
83     args = parser.parse_args()
84     return args
85
86 if __name__ == "__main__":
87     print("\n\n")
88     print("***** 60")
89     args = parse_args()
90     main(args)
91     print("***** 60")
92     print("\n\n")
```

## Jobs

The screenshot displays the Azure Machine Learning Studio interface. The top navigation bar shows the user is logged in as 'hyperparameter'. The left sidebar contains navigation options: 'All workspaces', 'Home', 'Model catalog', 'Authoring' (Notebooks, Automated ML, Designer, Prompt flow, Tracing), 'Assets' (Data, Jobs, Components, Pipelines, Environments), and 'Type here to search'. The main content area shows the 'Default' workspace with a table of jobs. The table has columns for 'Display name (1 visualized)', 'Parent job name', 'Status', 'Created on', and 'Duration'. One job is listed: 'heroic\_yuca\_yyzk11sz (1)' with a status of 'Completed' and a duration of '19s'. The bottom status bar shows the system time as 12:01 on 09-07-2024.

The screenshot displays the details of a completed job named 'heroic\_yuca\_yyzk11sz'. The top navigation bar shows the user is logged in as 'hyperparameter'. The left sidebar contains navigation options: 'All workspaces', 'Home', 'Model catalog', 'Authoring' (Notebooks, Automated ML, Designer, Prompt flow, Tracing), 'Assets' (Data, Jobs, Components, Pipelines, Environments), and 'Type here to search'. The main content area shows the job's details. The 'Overview' tab is selected, showing the job's status as 'Completed'. The 'Properties' section shows the job's status, created on date, start time, duration, compute duration, and compute target. The 'Inputs' section shows the input name 'dataset' and the data asset 'dataset:1a2d6a8f'. The 'Outputs' section shows two outputs: 'mlflow\_log\_model\_444148495' and 'mlflow\_log\_model\_1419215633', both with model assets.

tanishqagar: Striver DP S... Printing Lon... NLP Sentim... Print Longe... hyperparam heroic\_y... (2) WhatsAp... Google Me... Hyperparam +

ml.azure.com/experiments/id/0c51475e-1cca-47ed-9ee1-53be1279ad15/runs/f5d3c970-7e9e-4563-b40a-6e1e8743b566?wsid=/subscr... VPN

Azure AI | Machine Learning Studio

The Northcap university > hyperparameter > Jobs > Default > heroic\_yuca\_yyzk11sz

heroic\_yuca\_yyzk11sz Completed

Overview Metrics Images Child jobs Outputs + logs Code Explanations (preview) Fairness (preview) Monitoring

Created by  
Tanishqa Garg

Experiment  
Default

Arguments  
None

Registered models  
diabetes-classification:1

See all properties  
 Raw JSON

estimator\_name: GridSearchCV mlflow.autologging: sklearn  
mlflow.user: azureuser

Params

best\_max\_depth: None best\_min\_samples\_leaf: 1  
best\_min\_samples\_split: 2 best\_n\_estimators: 100 cv: 5  
error\_score: nan estimator: RandomForestClassifier(random\_state=0)  
n\_jobs: None  
param\_grid: {'n\_estimators': [100], 'max\_depth': [None], 'min\_samples\_split': [2], 'min\_samples\_leaf': [1]}  
pre\_dispatch: 2\*n\_jobs refit: True return\_train\_score: False  
scoring: roc\_auc verbose: 0

Type here to search

NIFTY +0.28% ENG IN 12:01 09-07-2024

## Job metrics

tanishqagar: Striver DP S... Printing Lon... NLP Sentim... Print Longe... hyperparam heroic\_y... (2) WhatsAp... Google Me... Hyperparam +

Airplane mode off

ml.azure.com/experiments/id/0c51475e-1cca-47ed-9ee1-53be1279ad15/runs/f5d3c970-7e9e-4563-b40a-6e1e8743b566?wsid=/subscr... VPN

Azure AI | Machine Learning Studio

The Northcap university > hyperparameter > Jobs > Default > heroic\_yuca\_yyzk11sz

heroic\_yuca\_yyzk11sz Completed

Overview Metrics Images Child jobs Outputs + logs Code Explanations (preview) Fairness (preview) Monitoring

Refresh Cancel Create custom chart View as... Current view: Local Edit view

heroic\_yuca\_yyzk11sz (8)

Select metrics

best\_cv\_score 0.9829029  
training\_accuracy\_score 1  
training\_f1\_score 1  
training\_log\_loss 0.04858686  
training\_precision\_score 1  
training\_recall\_score 1  
training\_roc\_auc 1  
training\_score 1

Type here to search

NIFTY +0.28% ENG IN 12:01 09-07-2024



## Registering the model

This screenshot shows the 'Register model from a job output' step in the Azure Machine Learning Studio interface. The left sidebar contains a navigation pane with four steps: 'Select job' (completed), 'Select output' (active), 'Model settings', and 'Review'. The main content area is titled 'Select output' and includes a message: 'A named model output has been detected in the job outputs and auto-selected. You can select any other output and/or type if this is not what you intend to select.' Below this, the 'Model type' is set to 'MLflow' and the 'Job output' is 'mlflow\_log\_model\_444148495 (azureml\_f5d3c970-7e9e-4563-b40a-6e1e874...)'. At the bottom, there are 'Back' and 'Next' buttons. An 'Activate Windows' watermark is visible in the bottom right corner.

tanishqag: Striver DP Printing Lc NLP Sentir Print Long hyperpara heroic x (14) D mlsa\_eve Hyperpara hyperpara + -

ml.azure.com/experiments/id/0c51475e-1cca-47ed-9ee1-53be1279ad15/runs/f5d3c970-7e9e-4563-b40a-6e1e8743b566?wsid=/s...

Azure AI | Machine Learning Studio

Register model from a job output

Select job

Select output

Model settings

Review

Select output

Specify the corresponding output to register the model.

A named model output has been detected in the job outputs and auto-selected. You can select any other output and/or type if this is not what you intend to select.

Model type \*

MLflow

Job output \*

mlflow\_log\_model\_444148495 (azureml\_f5d3c970-7e9e-4563-b40a-6e1e874...) X

Back Next

Activate Windows

Go to Settings to activate Windows.

Cancel

Type here to search

28°C Partly cloudy

ENG IN

01:53

09-07-2024

This screenshot shows the 'Model settings' step in the Azure Machine Learning Studio interface. The left sidebar shows the same four steps, with 'Model settings' now active. The main content area is titled 'Model settings' and includes a message: 'Configure the settings for your model.' Below this, the 'Name' is 'diabetes-classification', the 'Description' is empty, and the 'Version' is '1'. A note states 'Next available version for this model name : 1'. The 'Tags' section is empty, showing 'No tags'. At the bottom, there are 'Back' and 'Next' buttons. An 'Activate Windows' watermark is visible in the bottom right corner.

tanishqag: Striver DP Printing Lc NLP Sentir Print Long hyperpara heroic x (14) D mlsa\_eve Hyperpara hyperpara + -

ml.azure.com/experiments/id/0c51475e-1cca-47ed-9ee1-53be1279ad15/runs/f5d3c970-7e9e-4563-b40a-6e1e8743b566?wsid=/s...

Azure AI | Machine Learning Studio

Register model from a job output

Select job

Select output

Model settings

Review

Model settings

Configure the settings for your model.

Name \*

diabetes-classification

Description

Version

Next available version for this model name : 1

Tags

No tags

Back Next

Activate Windows

Go to Settings to activate Windows.

Cancel

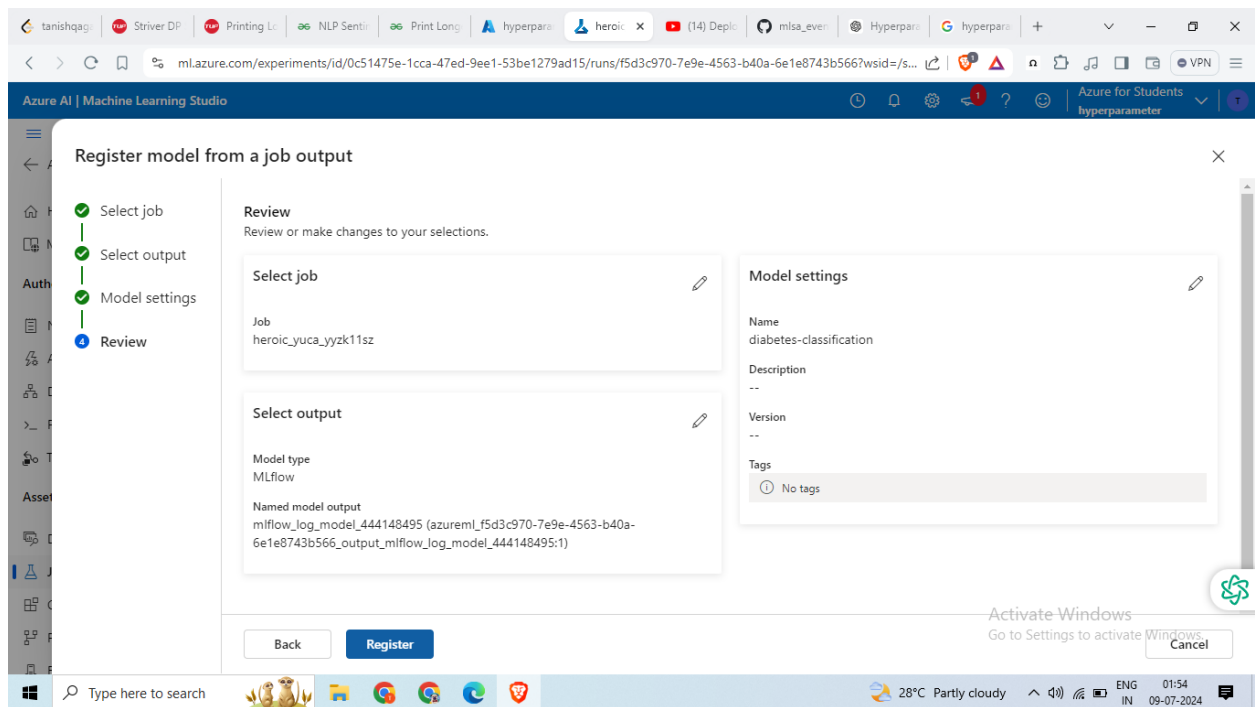
Type here to search

28°C Partly cloudy

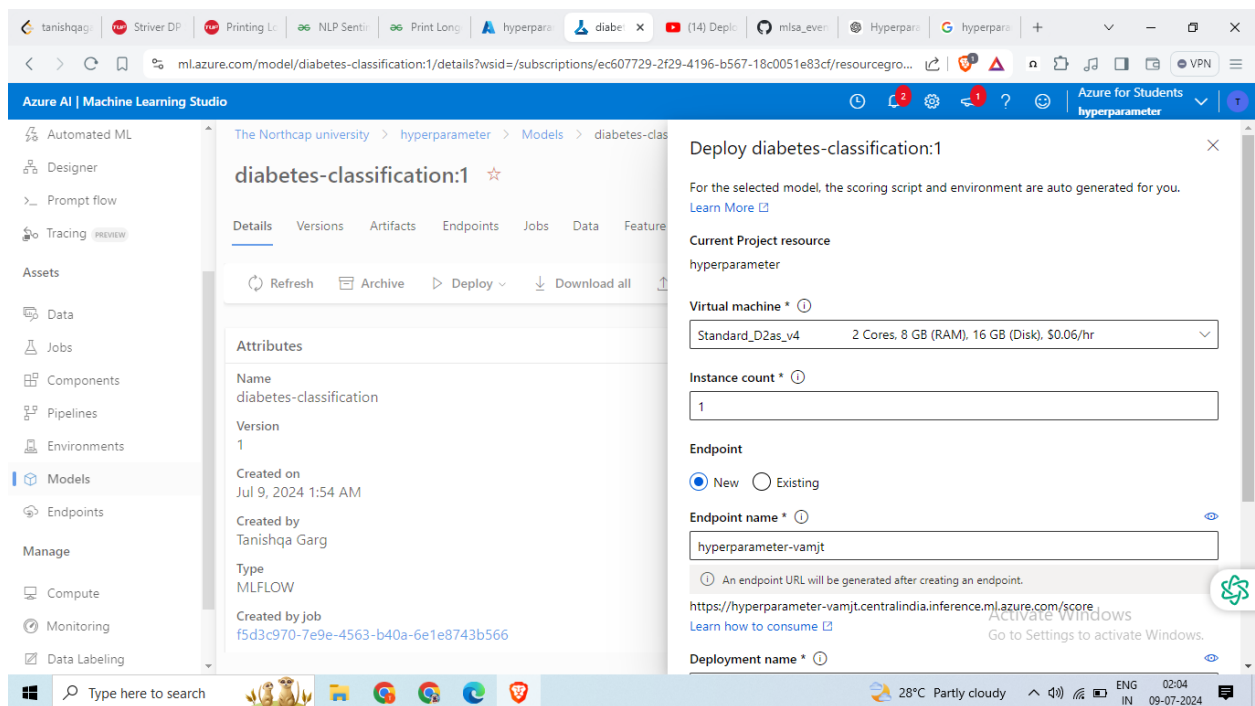
ENG IN

01:53

09-07-2024



## Deploy the model



tanishqag... Striver DP... Printing Lo... NLP Sentir... Print Long... hyperpara... diabet... (14) Deplo... mlsa\_eve... Hyperpara... hyperpara... +

ml.azure.com/model/diabetes-classification:1/details?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourcegro...

Azure AI | Machine Learning Studio

The Northcap university > hyperparameter > Models > diabetes-clas

### diabetes-classification:1

Details Versions Artifacts Endpoints Jobs Data Feature

Refresh Archive Deploy Download all

Attributes

Name  
diabetes-classification

Version  
1

Created on  
Jul 9, 2024 1:54 AM

Created by  
Tanishqa Garg

Type  
MLFLOW

Created by job  
f5d3c970-7e9e-4563-b40a-6e1e8743b566

Instance count \* ①  
1

Endpoint  
☒ New ☐ Existing

Endpoint name \* ①  
hyperparameter-vamjt

① An endpoint URL will be generated after creating an endpoint.  
<https://hyperparameter-vamjt.centralindia.inference.ml.azure.com/score>  
[Learn how to consume](#)

Deployment name \* ①  
diabetes-classification-1

Inferring data collection ①  
☐ Disabled

Package Model ①  
☐ Disabled

Deploy Cancel More options

Activate Windows  
Go to Settings to activate Windows.

Type here to search

28°C Partly cloudy

ENG IN 02:04 09-07-2024

## Testing the mdoel

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ml.azure.com/endpoints/realtime/hyperparameter-vamjt/test?wsid=/subscriptions/ec607729-2f29-4196-b567-18c0051e83cf/resourceceg...

Azure AI | Machine Learning Studio

The Northcap university > hyperparameter > Endpoints > hyperparameter-vamjt

### hyperparameter-vamjt

Details Test Consume Monitoring PREVIEW Logs

```
{
  "input_data": [
    [2, 120, 70, 35, 80, 28.5, 0.45, 35],
    [5, 140, 80, 30, 90, 31.5, 0.55, 40],
    [1, 100, 60, 25, 70, 26.0, 0.35, 30]
  ],
  "params": {}
}
```

Test

jsonOutput

```
[
  1,
  1,
  0
]
```

Type here to search

NIFTY +0.28%

ENG IN 11:46 09-07-2024