



Coming next...

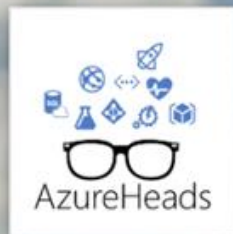


Developing
Solutions with
Azure Machine
Learning Studio

📅 25 . APR 📍 GREECE (VIRTUAL)

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Developing Solutions with Azure Machine Learning Studio



About me.



Microsoft MVP in AI

Microsoft Student Partner

Web Applications Developer @ ITT Inc.

Blogger

Traveler

Speaker



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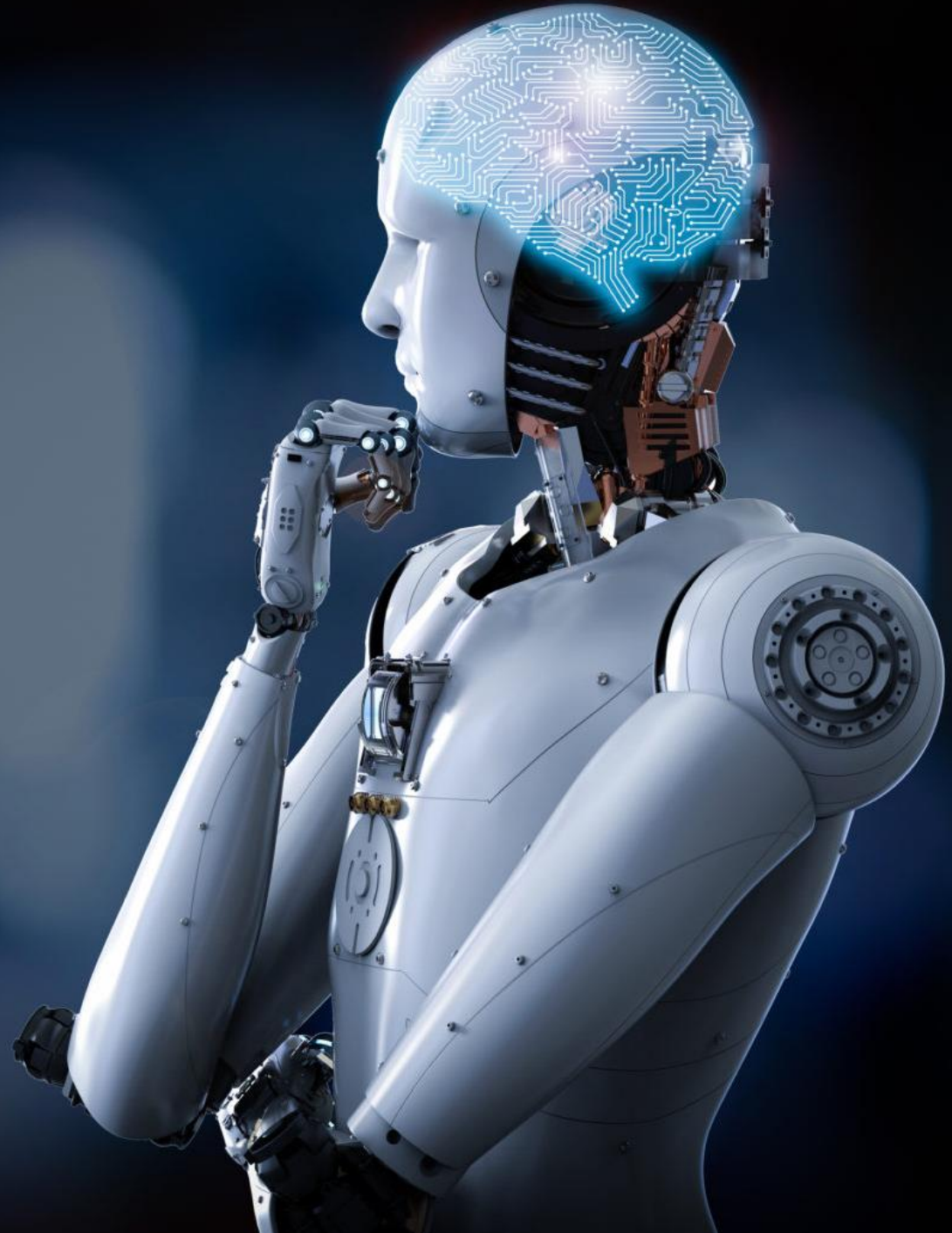
[GeorgiaKalyva](https://github.com/GeorgiaKalyva)



[@GeorgiaKalyva](https://twitter.com/GeorgiaKalyva)

Definition

- Artificial Intelligence is technology that appears to emulate human performance typically by learning, coming to it's own conclusions, appearing to understand complex content, engaging in natural dialogs with people, enhancing human cognitive performance or replacing or supporting people on execution of tasks.



Artificial Intelligence

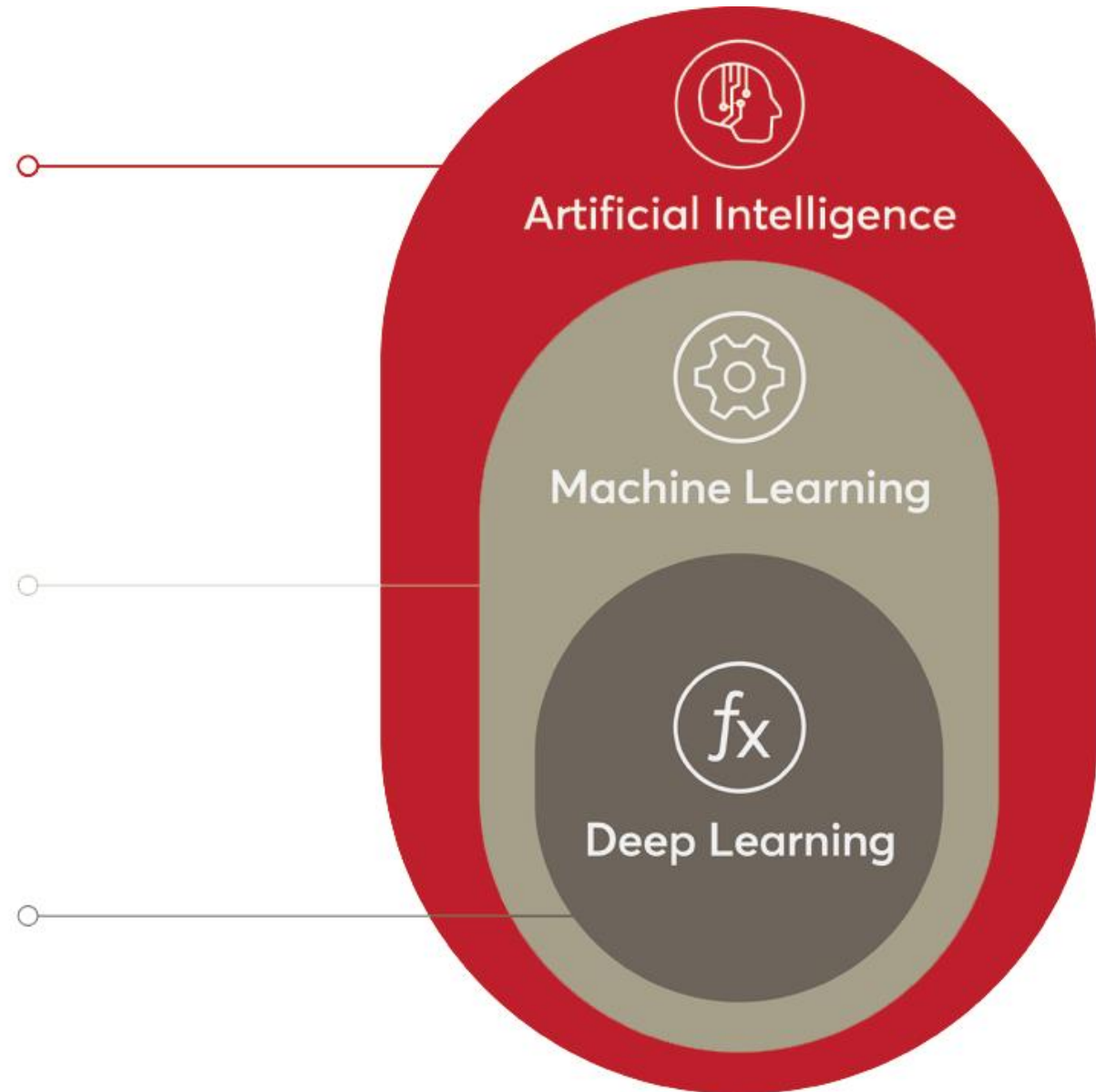
Any technique which enables computers to mimic human behavior

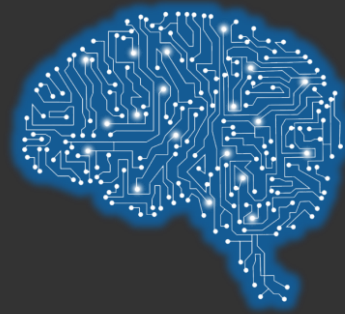
Machine Learning

Subset of AI techniques which use Statistical methods to enable machines to improve with experiences

Deep Learning

Subset of ML which makes the computation of multi-layer neural networks feasible





Machine Learning.

Machine Learning

“Programming the UnProgrammable”

Machine Learning creates a

$f(x)$

Model

using this data



Face



Face

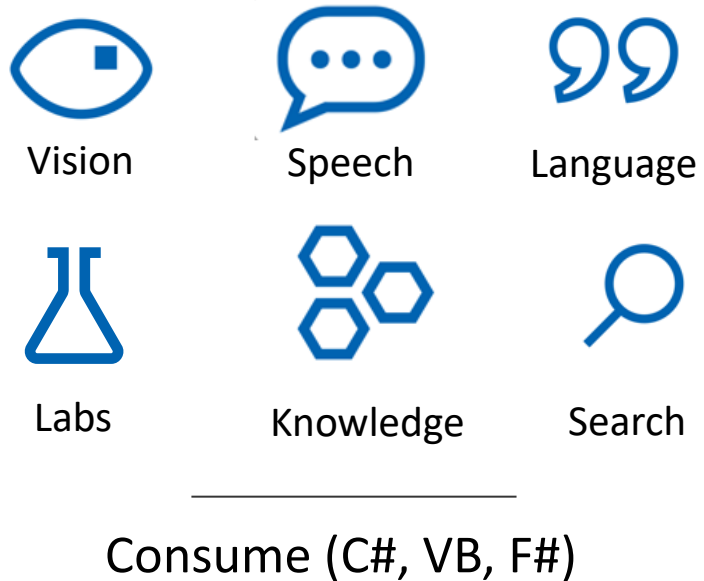


Not a face



Not a face

Pre-built machine learning models (i.e. Azure Cognitive Services)



e.g. Sentiment Analysis using Azure Cognitive Services

```
TextAnalyticsAPI client = new TextAnalyticsAPI();
client.AzureRegion = AzureRegions.Westus;
client.SubscriptionKey = "1bf33391DeadFish";

client.Sentiment(
    new MultiLanguageBatchInput(
        new List<MultiLanguageInput>()
        {
            new MultiLanguageInput("en", "0",
                "This is a great vacuum cleaner")
        }
    ));
```

😊 96% positive

Machine Learning Types



#1

Supervised
learning



#2

Unsupervised
learning

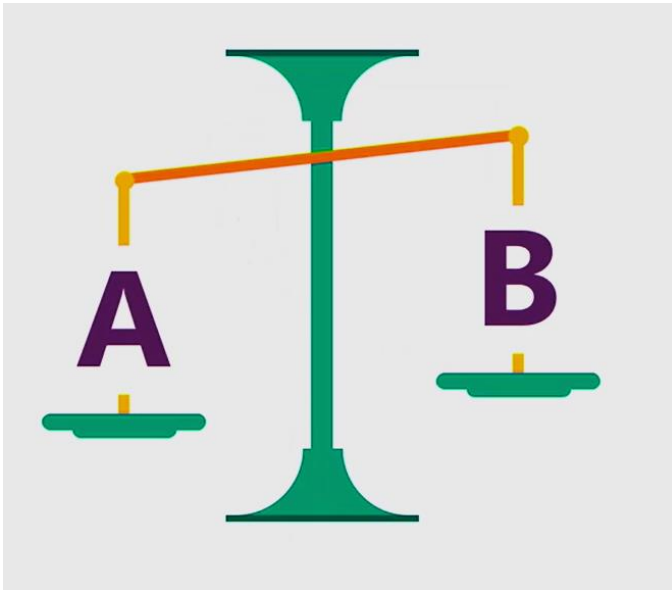


#3

Reinforcement
Learning

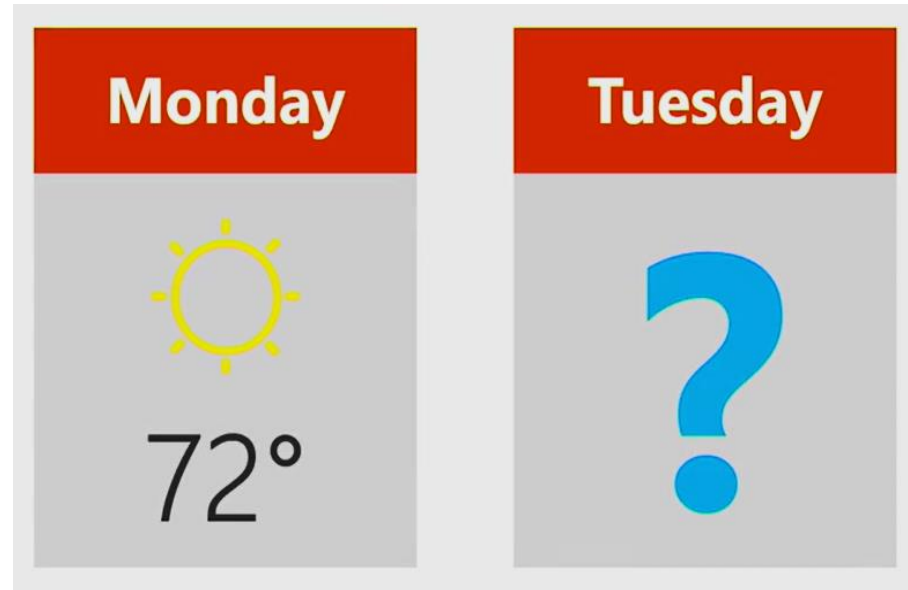
Machine Learning Algorithms

Is this A or B?



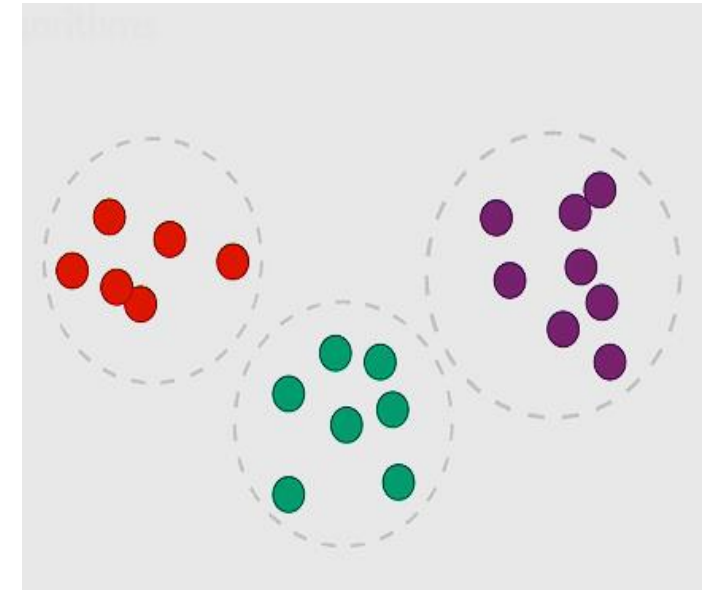
Classification

How much? How many?



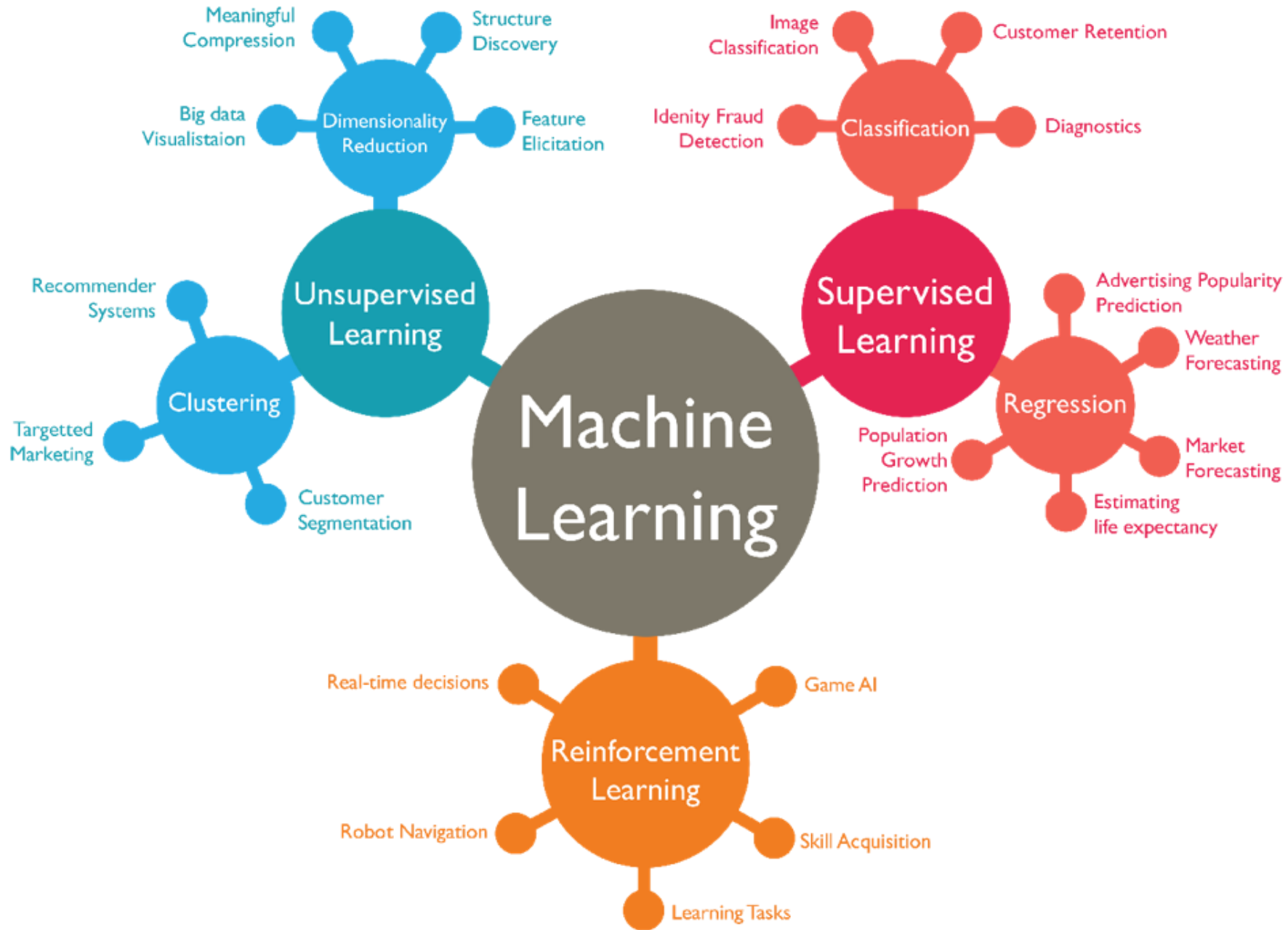
Regression

How is this organized?

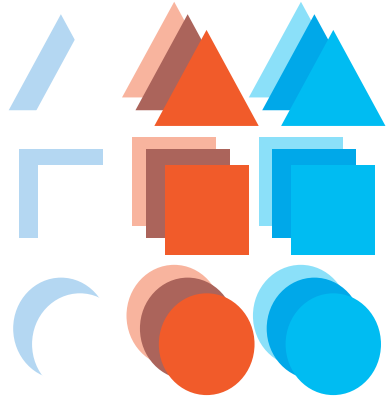


Clustering

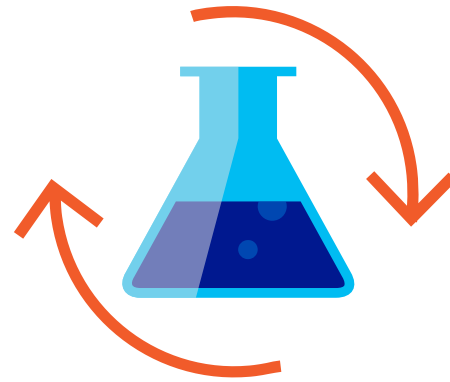
And more...



Building custom machine learning models



Prepare Your Data



Build & Train



Run



Azure Machine Learning.

Azure Machine Learning

A cloud-based environment you can use to train, deploy, automate, manage, and track ML models



Scalable,
on-demand
compute



Data
storage and
connectivity



ML workflow
orchestration



Model
registration
and
management

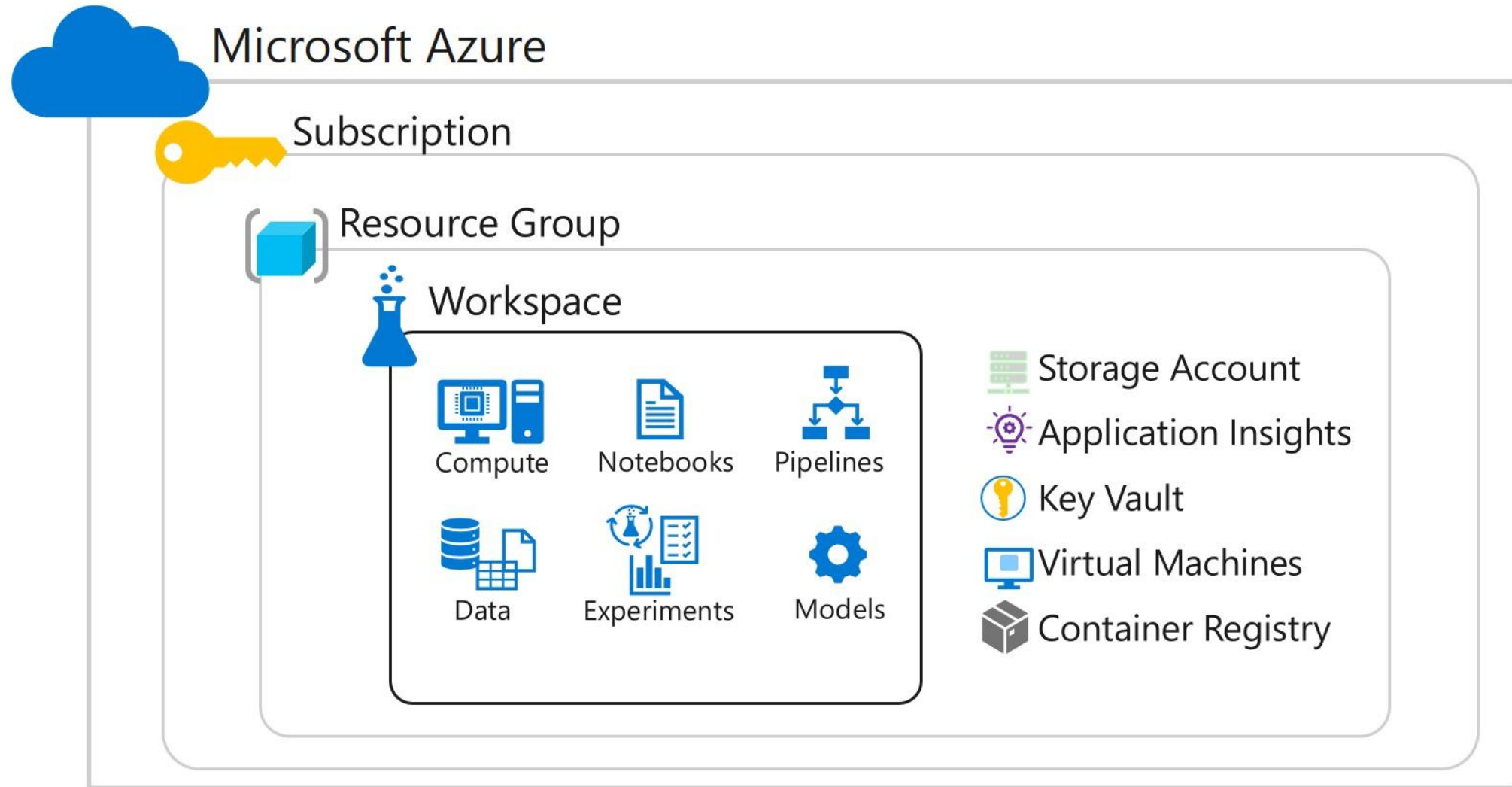


Metrics and
monitoring



Model
deployment

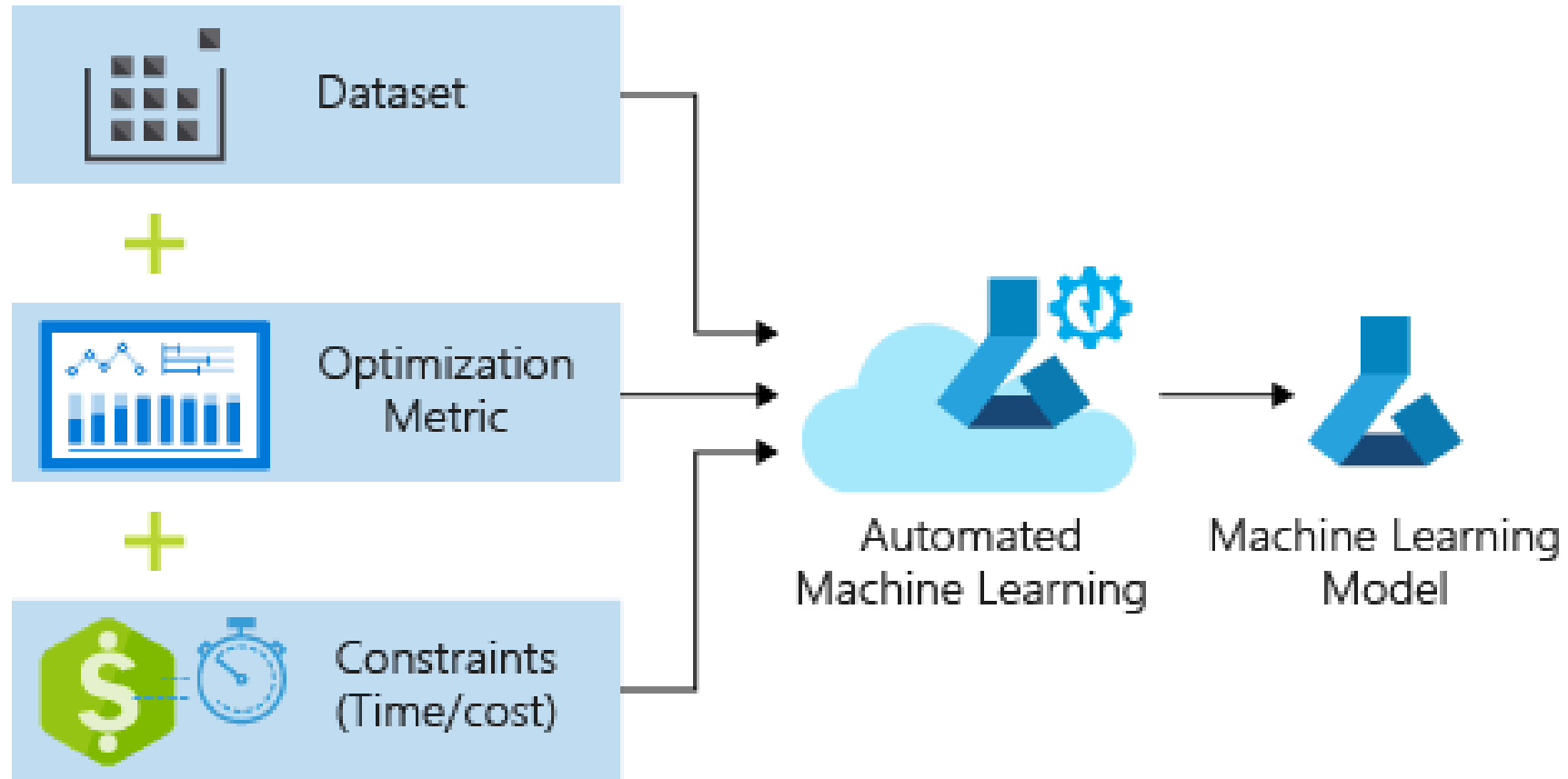
Azure ML Workspaces



Drag & Drop Model Designer







Automated ML






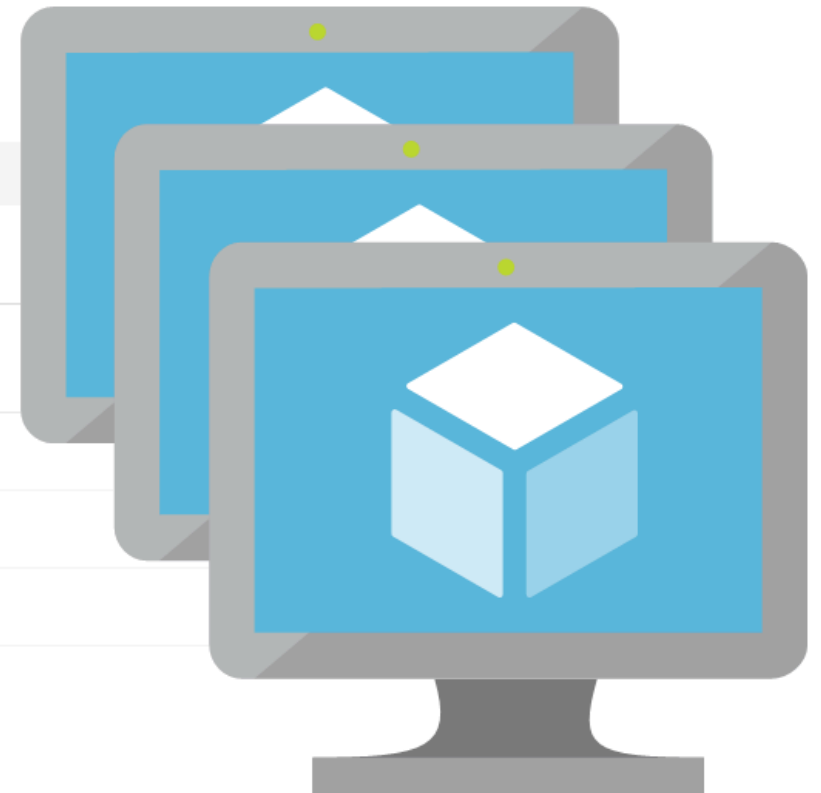
Azure ML Compute

Compute Instances **Training clusters** Inference clusters Attached compute

 Create a single or multi-node training cluster for your training or batch workloads across single node, distributed training or batch inferencing.

 New  Refresh  Delete

Name	Provisioning state	Virtual Machine size	Created on ↓
mlpc3	 Succeeded (0 nodes)	STANDARD_D2_V2	Apr 24, 2020 4:09 PM
mlpc2	 Succeeded (0 nodes)	STANDARD_D2_V2	Apr 23, 2020 8:18 PM
mlpc	 Succeeded (0 nodes)	STANDARD_D2_V2	Apr 20, 2020 5:16 PM



Real-time testing from the portal

Details **Test** Consume

Input data to test real-time endpoint

Test

MovieRatingsInput

UserId

1

MovieName

The Godfather (1972)

Test result

parsed

raw

WebServiceOutput0

key	value
User	1
Item	The Godfather (1972)
Rating	9.754590749818227




Deployment as REST API

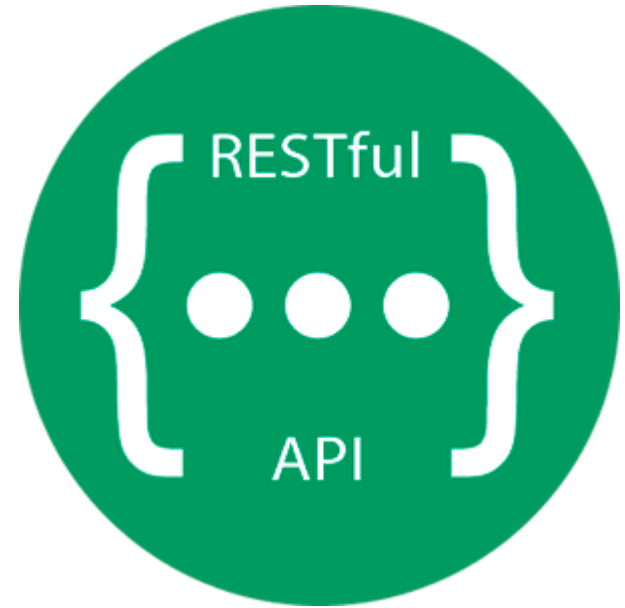
Details Test Consume

Basic consumption info

REST endpoint

<http://23.99.221.80:80/api/v1/service/movie-recommender-real-time/score> 

Using key Using token



Tools



Azure Machine Learning studio



The Azure Machine Learning SDK (Python/R)

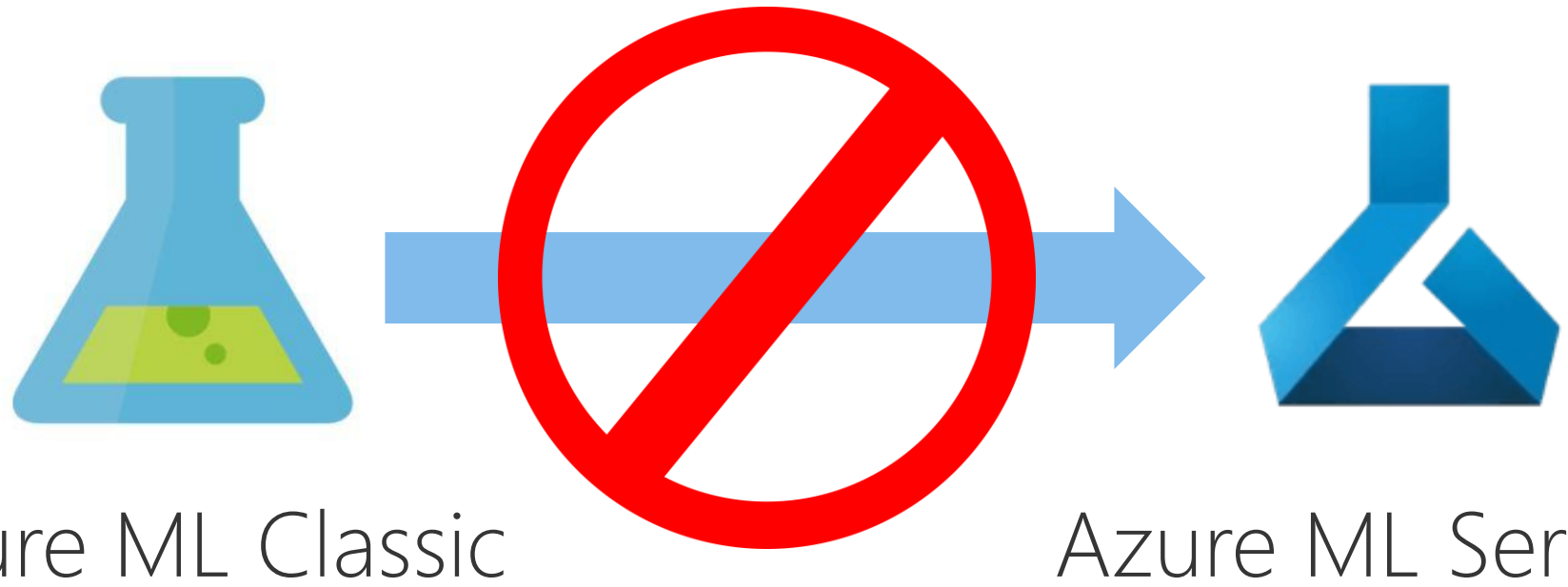


The Azure Machine Learning CLI Extension



Visual Studio Code

Migration Support



Azure ML Classic

Azure ML Services



Demos.

Questions?



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Coming next...

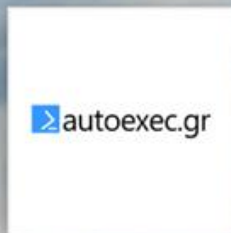
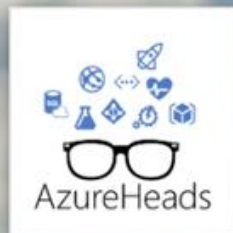


What's new in
Microsoft Threat
Protection

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