

An illustration of a classroom setting. A robot teacher stands in the center, gesturing towards a whiteboard. The whiteboard has the text 'GLOBAL AI BOOTCAMP' at the top and some sticky notes below. Six students are seated at desks, each with a laptop. The scene is dimly lit with a dark background and some glowing light effects.

# **AI on Azure, What's new? Has AITaiar**

```
1 import csv
2
3 if __name__ == "__main__":
4
5     with open('data.csv', 'rb') as f:
6         reader = csv.reader(f)
7         data_as_list = list(reader)
8
9     data_as_list.
```

- ★ append
- ★ extend
- ★ pop
- ★ sort
- ★ insert
- count
- index
- remove
- reverse
- \_\_add\_\_
- \_\_base\_\_
- \_\_bases\_\_

list.append(self, value) ×

L.append(object) -- append object to end

## Does AI poetry do it for you?

### ENGLISH

The rain is blowing through the sea  
A bird in the sky  
A night of light and calm  
Sunlight  
Now in the sky  
Cool heart  
The savage north wind  
When I found a new world

### CHINESE

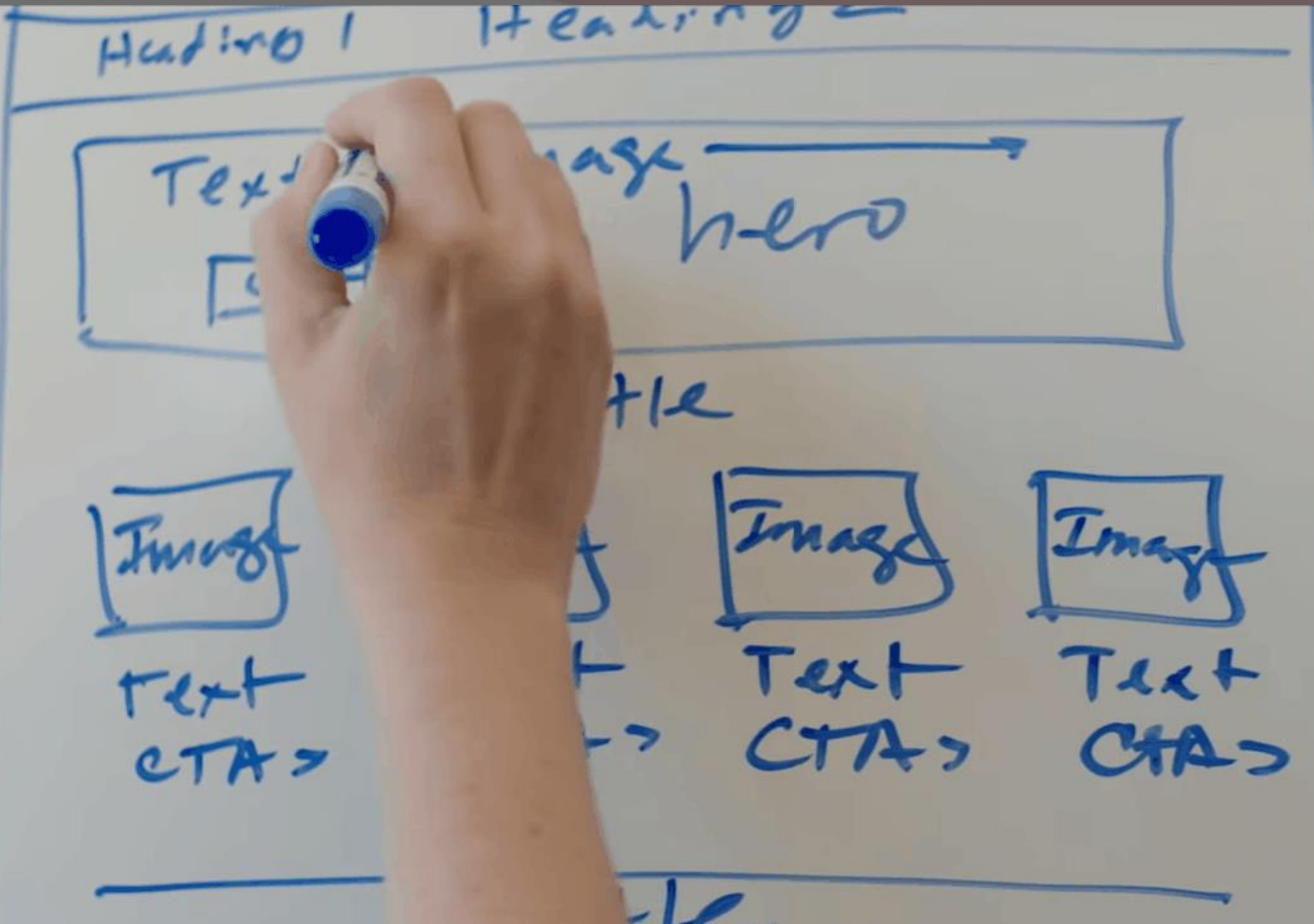
雨过海风一阵阵  
撒向天空的小鸟  
光明冷静的夜  
太阳光明  
现在的天空中去  
冷静的心头  
野蛮的北风起  
当我发现一个新的世界

Translated to English using Microsoft's Bing Translator

SCMP

<https://visualstudio.microsoft.com/services/intellicode/>

<https://www.scmp.com/news/china/society/article/2097044/microsofts-ai-bot-has-published-book-poems-china-it-worth-reading>



**What's Machine learning?  
AI On Azure  
What's new?**



# Machine Learning

## “Programming the UnProgrammable”

Is this a face?



$f(x)$

Price of Shirt?

“It has **exquisite** buttons ...  
with **long sleeves** ...works for  
casual as well as **business**  
**settings**”

$f(x)$

# Machine Learning

## “Programming the UnProgrammable”

Machine Learning creates a

$f(x)$

*Model*

Using this data



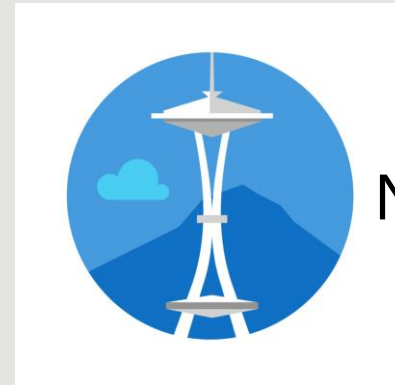
Face



Face



Not a face

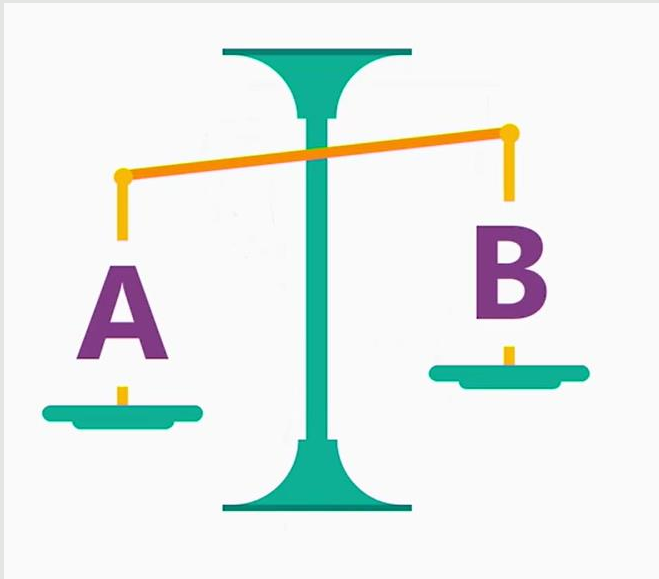


Not a face



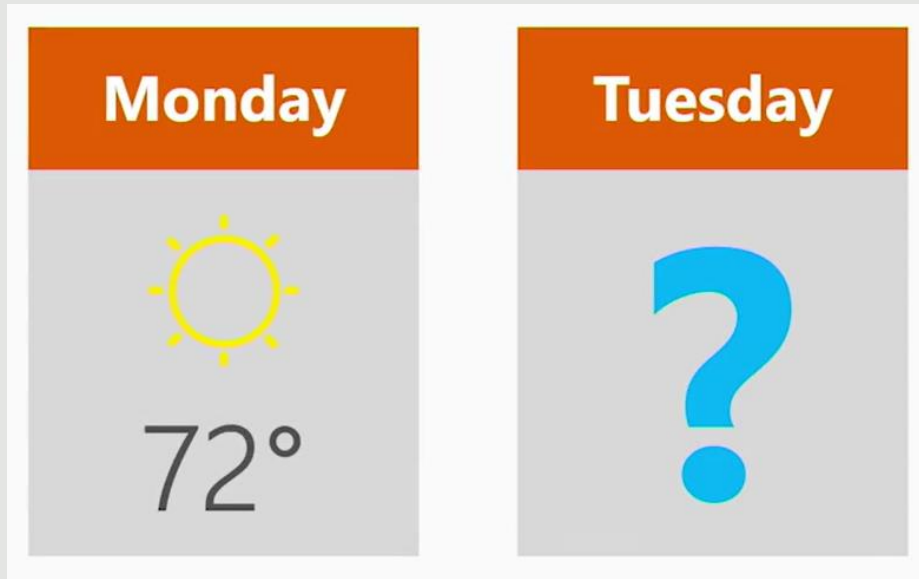
# Many ML Tasks...

Is this A or B?



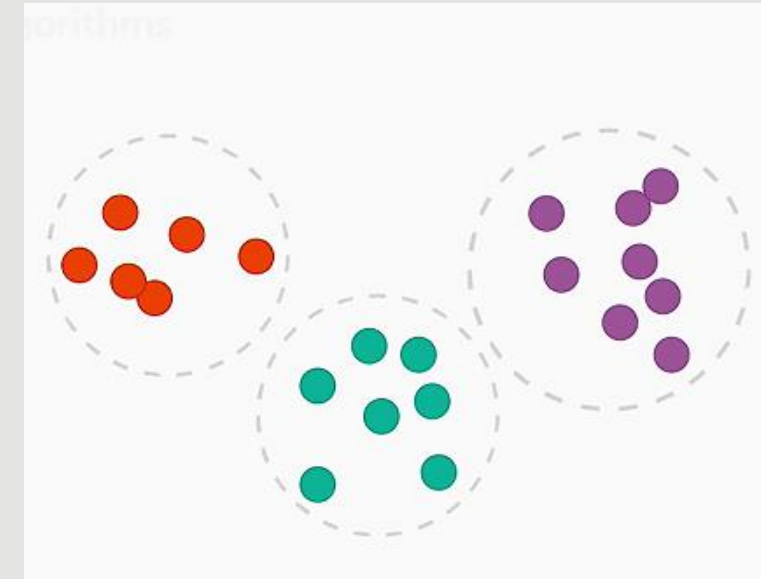
Classification

How much? How many?



Regression

How is this organized?



Clustering

# Machine Learning Process

SQL DB

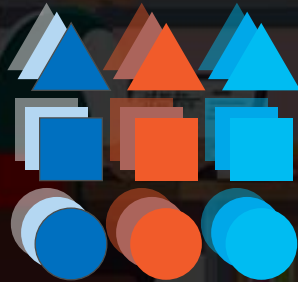
Cosmos DB

Datawarehouse

Data lake

Blob storage

...



Prepare Data



Build & Train



Deploy



**AI On Azure**



<http://azureaibootcamp.me>

**#GlobalAIBootcamp**

# AI On Azure

## Tools

- VS Code Tools for AI
- Azure Machine Learning
- Machine Learning Packages
- AI Toolkit for IoT Edge

## Frameworks

- Tensorflow
- Onnx
- ML.Net
- Others

## Infrastructure

- DataBricks
- Azure Kubernetes
- Azure Batch AI
- Data Science VM
- IoT Edge

# Pre-Built Services



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# Azure Cognitive Services

Powerful prebuilt AI models exposed as API services

Process images, video, speech, language and more

Simple REST APIs with .NET, Java, Python, Node SDKs

Deploy to the edge or on premises with container support



Vision



Speech



Language



Conversation



Bing Search



Knowledge

# Azure Machine Learning Service

## ONNX Runtime is now open source

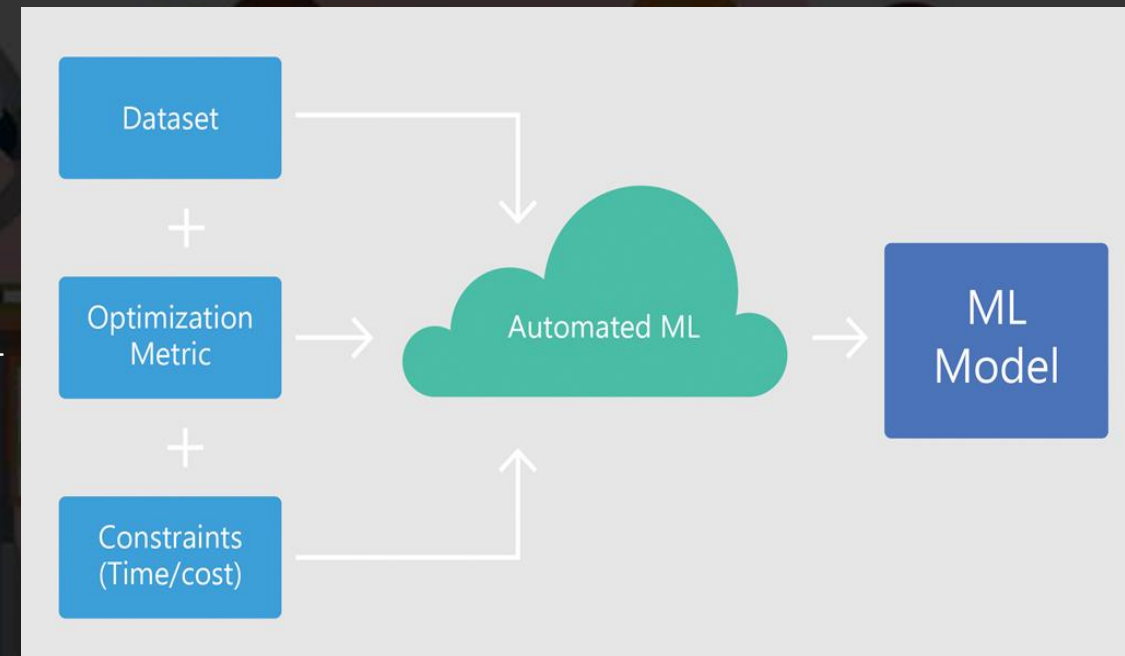
<https://azure.microsoft.com/en-us/blog/onnx-runtime-is-now-open-source/>

## Azure Machine learning Services goes GA

<https://azure.microsoft.com/en-us/blog/azure-machine-learning-service-a-look-under-the-hood/>

## Azure Machine Learning – Auto ML

<https://azure.microsoft.com/en-au/blog/announcing-automated-ml-capability-in-azure-machine-learning/>





# Azure Cognitive Services

## Azure Cognitive Services on the Edge

<https://azure.microsoft.com/en-us/blog/bringing-ai-to-the-edge/>

## Custom Translation capability of Text Translator

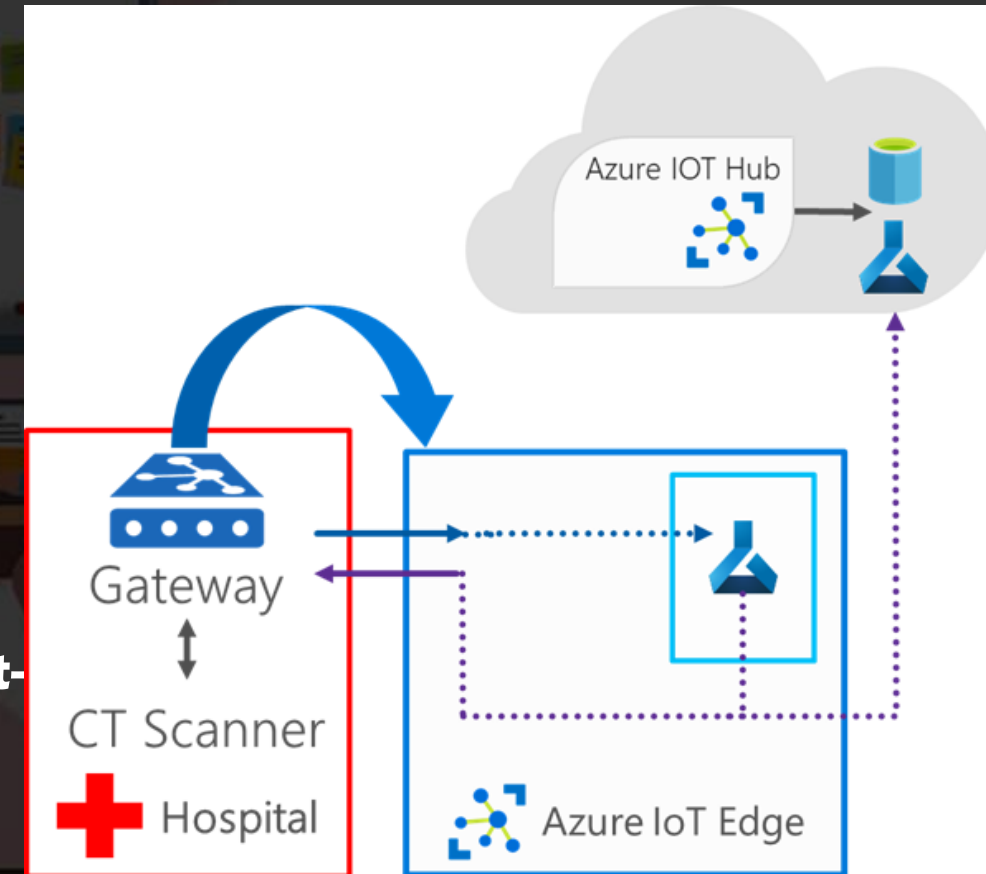
<https://azure.microsoft.com/en-au/updates/custom-translation-capability-of-text-translator-is-now-available/>

## Public Preview – Container Support for Language Understanding Cognitive Service

<https://azure.microsoft.com/en-au/updates/container-support-for-language-understanding-is-in-preview/>

## Public Preview -Microsoft previews neural network text-to-speech

<https://azure.microsoft.com/en-us/blog/microsoft-previews-neural-network-text-to-speech/>





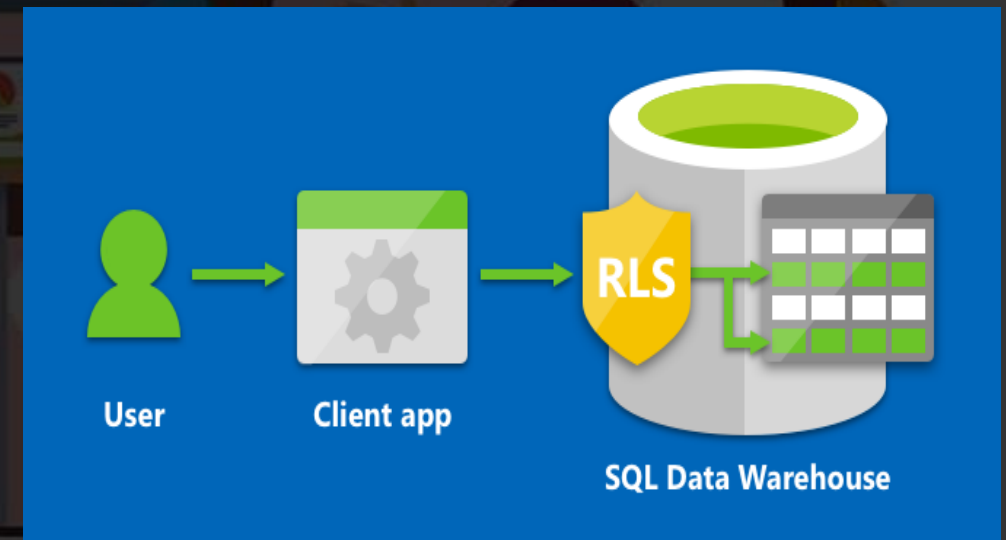
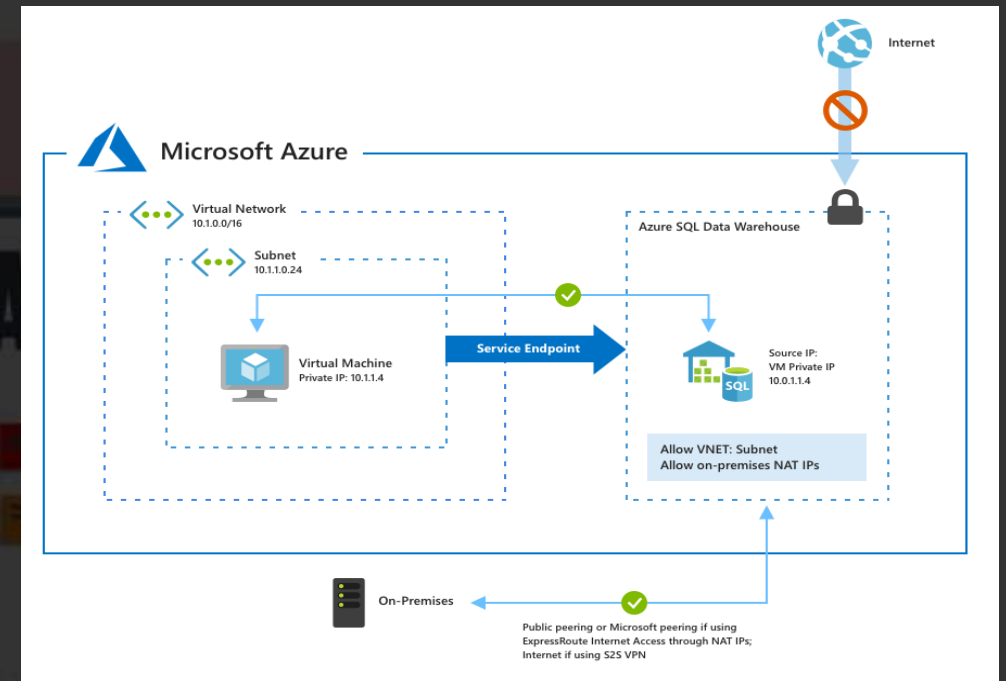
# Storage & Databases

## GA of VNet support for Azure SQL DW

<https://azure.microsoft.com/en-us/blog/general-availability-of-vnet-service-endpoints-for-azure-sql-data-warehouse/>

## GA of Row-Level Security support for Azure SQL DW

<https://azure.microsoft.com/en-us/blog/row-level-security-is-now-supported-for-azure-sql-data-warehouse/>



# IoT & Advanced Analytics

## Azure Stream Analytics on IoT Edge goes GA

<https://azure.microsoft.com/en-au/updates/azure-stream-analytics-on-iot-edge-generally-available/>

## New capabilities on Azure Time Series Insight

<https://azure.microsoft.com/en-au/updates/new-key-capabilities-added-to-time-series-insights/>

## Azure IoT Solution Accelerators are updated

<https://azure.microsoft.com/en-us/blog/azure-iot-remote-monitoring-extends-operator-capabilities-to-the-edge/>

## GA of Azure Event Hubs for Apache Kafka

<https://azure.microsoft.com/en-us/blog/announcing-the-general-availability-of-azure-event-hubs-for-apache-kafka>

# Big Data

## Better Python Support for Azure Functions

<https://azure.microsoft.com/en-us/blog/azure-functions-gets-better-for-python-and-javascript-developers/>

## Azure Functions now supported as a step in Azure Data Factory pipelines

<https://azure.microsoft.com/en-us/blog/azure-functions-now-supported-as-a-step-in-azure-data-factory-pipelines/>

## Azure HDInsight integration with Data Lake Storage Gen2 preview

<https://azure.microsoft.com/en-us/blog/azure-hdinsight-integration-with-data-lake-storage-gen-2-preview-acl-and-security-update/>

## Azure Data Lake Storage Gen2 preview – More features, and better performance

<https://azure.microsoft.com/en-us/blog/azure-data-lake-storage-gen2-preview-more-features-more-performance-better-availability/>

# Azure AI Gallery

<https://gallery.azure.ai>



EXPERIMENT

## Prediction of Blood Donation

Based on history of blood donated, predict if donor will donate or not. Maximum possible efficiency tried to achieve in a small dataset.

Two-Class Decision Forest

63 ↓ 58 5 days ago

AT Aditya TS



EXPERIMENT

## Credit Risk Experiment

Credit risk prediction from customer credit application data

Two-Class Boosted Decision Tree, Two-Class Support Vector Machine

8 ↓ 3 yesterday

HH haliza husna



EXPERIMENT

## Sentiment Analysis for Academic Emotions using Mouse Move...

This experiment attempts to predict academic emotions of children based on their mouse movement.

Linear Regression, Two-Class Support Vector Machine

19 ↓ 17 2 days ago

RM Richmond Manga



EXPERIMENT

## Rain Prediction

Predicting through Classification Algos whether it has rained or not in a given hourly slot.

Two-Class Boosted Decision Tree, Two-Class Decision Forest

0 ↓ 0 2 days ago

MM Marco Mambelli



# Additional Learning Resources

An illustration of a classroom setting. A white humanoid robot stands in the center, gesturing towards a whiteboard. The whiteboard has the text 'GLOBAL AI BOOTCAMP' and 'NEW INTELLIGENT WORLDS' on it, along with some diagrams and sticky notes. Several students are seated at desks with laptops, looking towards the robot. The background is dark with some light-colored circular patterns.

## Microsoft Learn

<https://docs.microsoft.com/en-us/learn/>

## AI School

<https://aischool.microsoft.com/>

## IoT School

<https://iotschool.microsoft.com/>

## FREE eBook – Developer’s Guide to Building AI Applications

<https://info.microsoft.com/ww-landing-ai-developers-bot-ebook.html>

<http://azureaibootcamp.me>

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# Questions?

