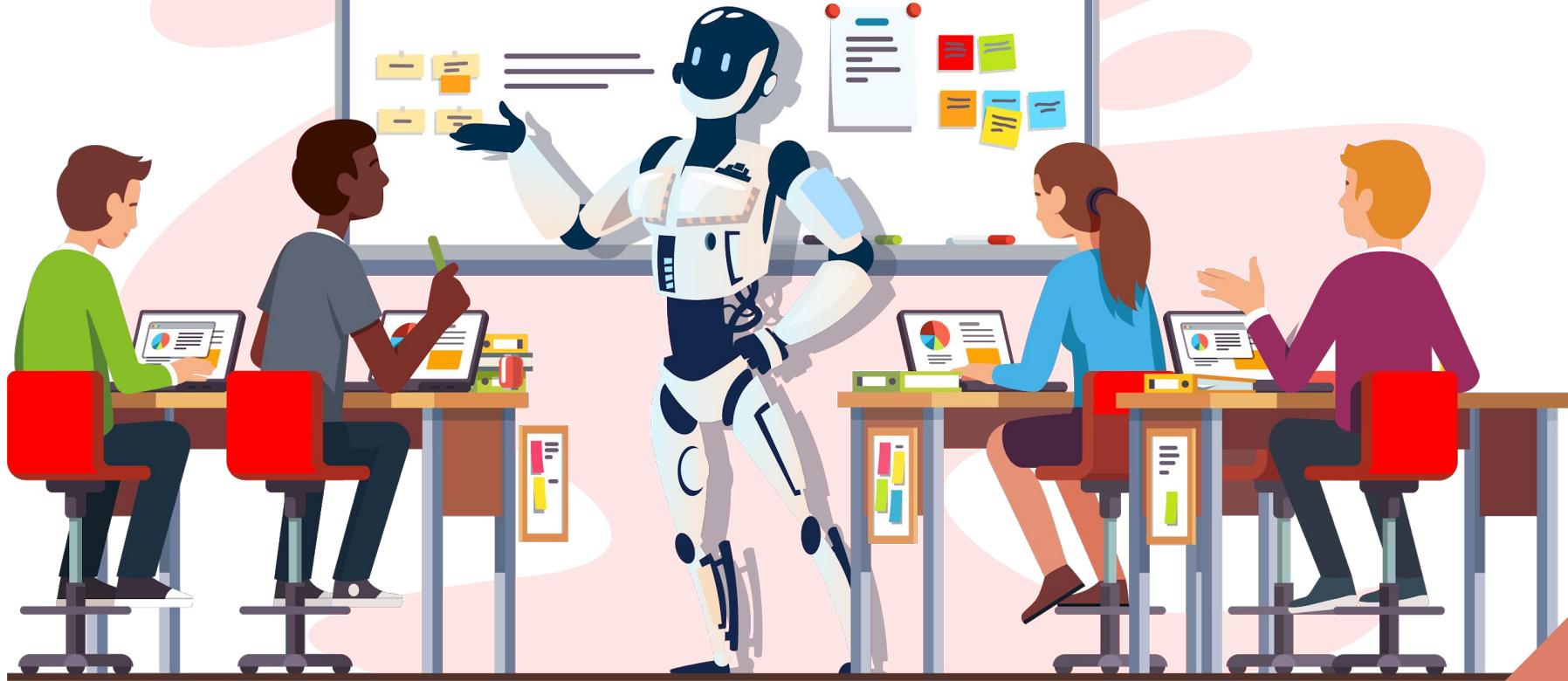


# Global AI Nights



# Agenda

- 19:15 - 19:30 Connecting with people
- 19:30 - 20:10 No code using Azure Machine Learning Visual Interface  
@Money Yu @Kristen Chan
- 20:15 - 21:15 人臉辨識之真實戰經驗 @小白
- 21:15 Connecting and See you



# Global AI Bootcamp

## Is that red wine good or bad?

How to use Azure Machine Learning Visual Interface to build ML models  
with no code to predict red wine quality.

Kristen Chan  
Money Yu

# Hello !

I am Kristen Chan

**Data Scientist**

E-Commerce / Telecom

**R-Ladies Taipei**

Co-Organizer

**Microsoft MVP**

AI Platform



# R-Ladies Taipei

- **Meetup every last Monday**  
<https://www.meetup.com/R-Ladies-Taipei>
- **FB pages**  
<https://www.facebook.com/groups/twrladies/>

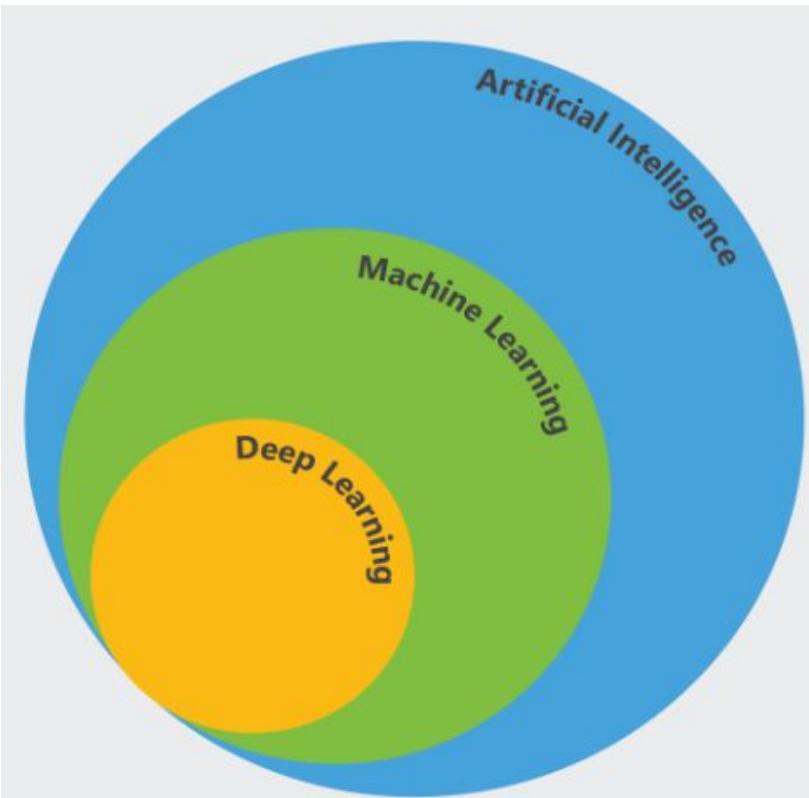


R-Ladies Taipei



# Overview

# What is Machine Learning



## Artificial Intelligence

Techniques which allow computers to mimic human intelligence, including use of logic, decision trees, and machine learning (including deep learning).

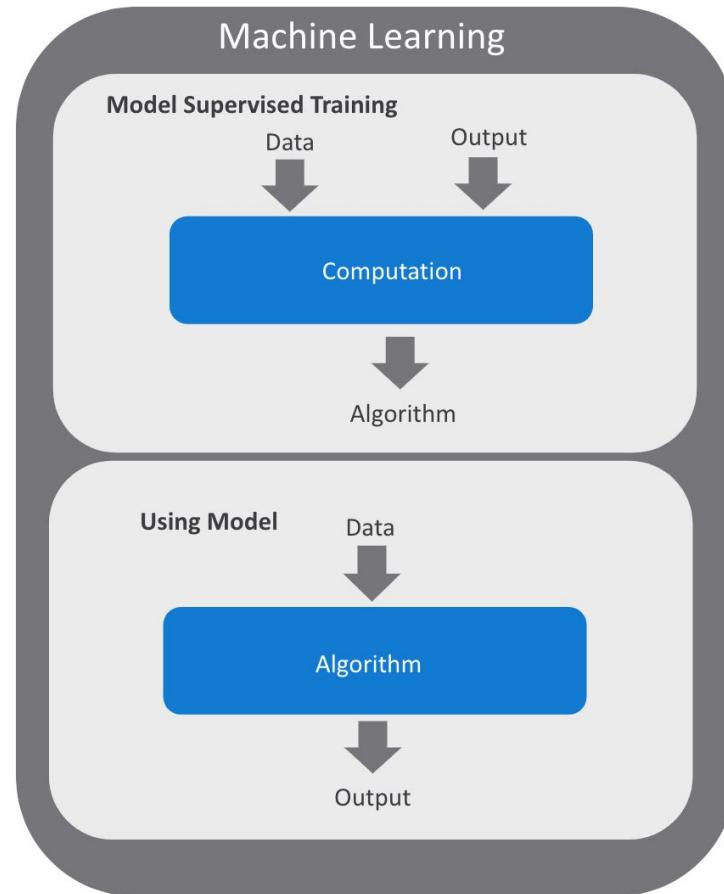
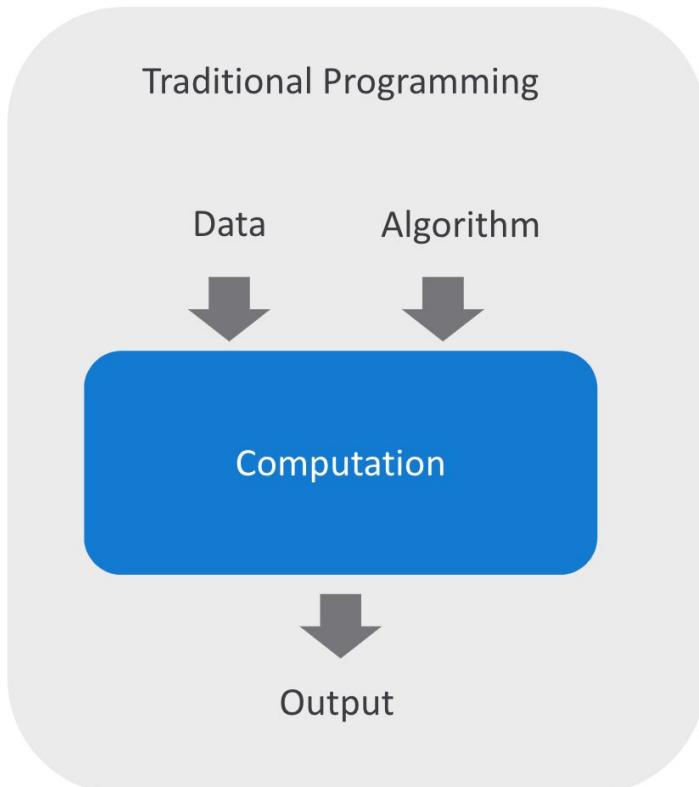
## Machine Learning

A subset of artificial intelligence where statistical methods are used to help a system improve at tasks with training and experience. This category includes deep learning.

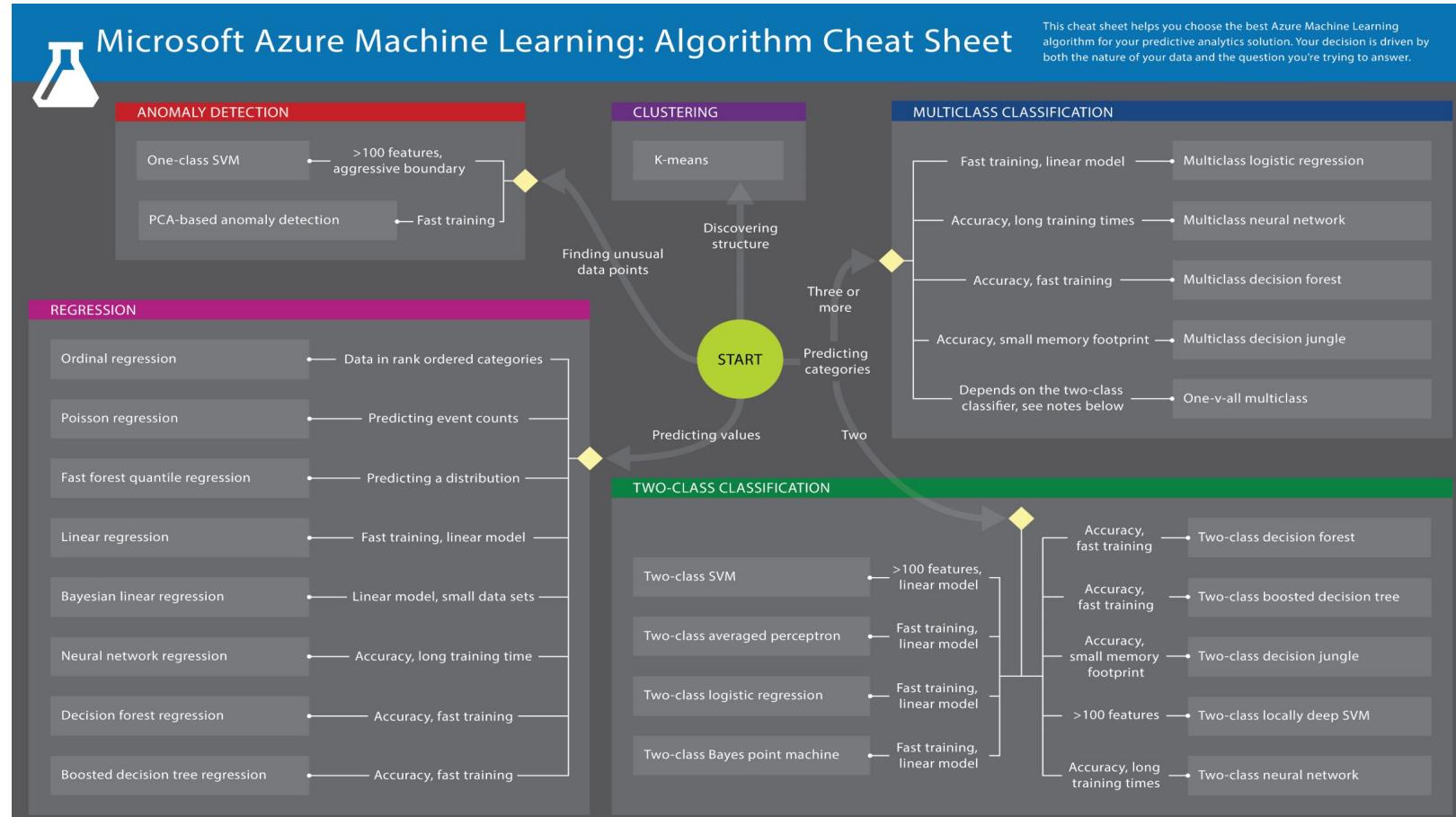
## Deep Learning

A subset of machine learning where a system can train itself to perform tasks, including language and image analysis, by using multi-layered neural networks.

# Traditional Programming VS. Machine Learning



# Algorithm Cheat Sheet



# Classification Example

Age	Income	Education	Gender	Housing
61	\$65,000	Moderate	F	Own
42	\$72,000	High	F	Rent
18	\$25,000	Moderate	M	Other
22	\$36,000	Low	M	Rent

Training data

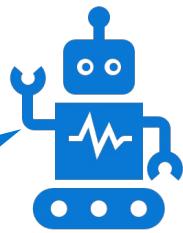
  

31	\$52,000	High	M	?
----	----------	------	---	---

What we know  
“features”/“attributes”

Thing to predict  
“class”/“label”

# Machine Learning / AI tools



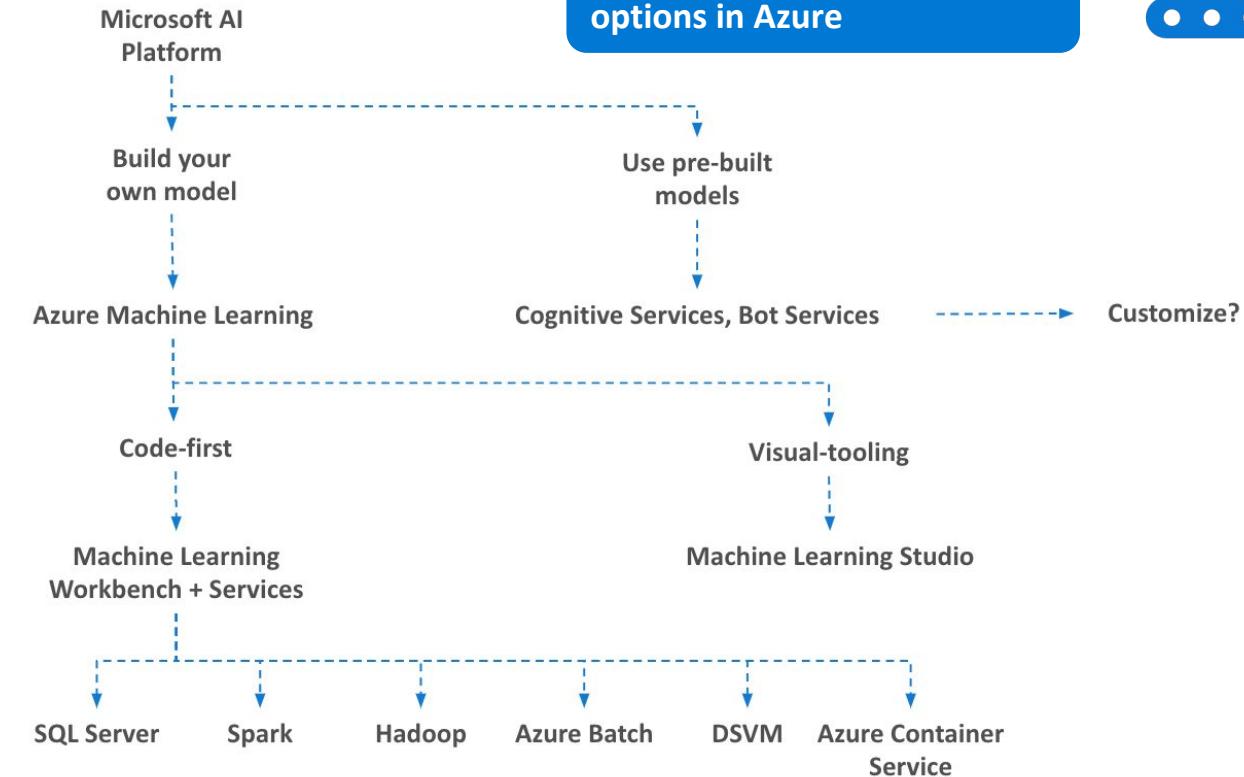
Different machine learning options in Azure

Build your own or consume pre-trained models?

Which experience do you want?

Tools & Services

What engine(s) do you want to use?



# Workshop

Azure Machine Learning Visual Interface  
Is that red wine good or bad?

# 什麼是 Azure Machine Learning Visual Interface



Visual interface  
for Azure Machine  
Learning service

# 進入 Azure Portal

登入 : <https://portal.azure.com/>



建帳號 : <https://azure.microsoft.com/en-us/free/>

The screenshot shows the Microsoft Azure free account sign-up page. At the top right are navigation links: Contact Sales: 0809090343, Search, My account, Portal, and Hsin 論壇. Below the header is a navigation bar with links: Overview, Solutions, Products, Documentation, Pricing, Training, Marketplace, Partners, Support, Blog, and More. The main content area features the text "Create your Azure free account today" and "Get started with 12 months of free services". It includes two prominent buttons: "Start free >" and "Or buy now >". Below these buttons is a large image of a tablet displaying the Microsoft Azure dashboard, which shows various performance metrics and resource groups.

# Create Resource in Azure

Microsoft Azure

1 建立資源

2 AI + 機器學習服務

3 Machine Learning 服務工作區

搜尋資源、服務及文件 (G+)

首頁

儀表板

所有服務

我的最愛

所有資源

資源群組

應用程式服務

SQL 資料庫

SQL 資料倉儲

Azure Cosmos DB

虛擬機器

負載平衡器

儲存體帳戶

虛擬網路

Azure Active Directory

監視

Advisor

資訊安全中心

成本管理 + 計費

說明 + 支援

搜尋 Marketplace

開始使用

Machine Learning 服務工作區

最近建立

AI + 機器學習服務

分析

區塊鏈

計算

容器

資料庫

開發人員工具

DevOps

身分識別

整合

物聯網

媒體

混合實境

管理工具

網路

軟體即服務 (SaaS)

Security

Web App Bot

快速入門教學課程

電腦視覺

快速入門教學課程

臉部

快速入門教學課程

文字分析

快速入門教學課程

語言理解

快速入門教學課程

Bing 搜尋 v7

快速入門教學課程

Ubuntu Server 18.04 LTS

深入了解

# Create Resource in Azure

The screenshot shows the Microsoft Azure portal interface. On the left is a dark sidebar with various service icons and links. The main area shows a breadcrumb path: 首頁 > 新增 > Machine Learning 服務工作區. The title is 'Machine Learning 服務工作區' with a '建立' (Create) button. Below the title are tabs: \* 主要, 標籤, \* 檢閱. The '主要' tab is active, showing fields for: 工作區名稱 (GlobalAINight), 訂用帳戶 (Visual Studio Enterprise), 資源群組 ((新增) GlobalAINight), 新建 (Create), and 位置 (美國西部). A note below says: '為您的方便起見，下列資源會自動新增至工作區 (視區域可用性): Azure 儲存體、Azure Application Insights 和 Azure Key Vault。' To the right, a green callout box highlights three steps: 1. 輸入工作區名稱 (e.g. GlobalAINight), 2. 新增一個資源群組 (e.g. GlobalAINight), and 3. 選擇機器位置 (e.g. 美國西部). At the bottom is a blue '評論及建立' (Review + Create) button.

- 輸入工作區名稱  
e.g. GlobalAINight
- 新增一個資源群組  
e.g. GlobalAINight
- 選擇機器位置  
e.g. 美國西部

# Create Resource in Azure

<input type="checkbox"/>	 GlobalAINight	Machine Learning 服務工作區
<input type="checkbox"/>	 globalainight1734961975	金鑰保存庫
<input type="checkbox"/>	 globalainight2736086586	Application Insights
<input type="checkbox"/>	 globalainight8241269597	儲存體帳戶

總共會建立出這四個 resource



# Launch Azure Machine Learning Visual Interface

Microsoft Azure

1 首頁 > 所有資源 > GlobalAINight

GlobalAINight  
Machine Learning 服務工作區

搜尋 (Ctrl + F)

概觀

活動記錄

存取控制 (IAM)

標籤

診斷並解決問題

製作 (預覽)

自動化機器學習

Notebook VM

視覺化介面

資源群組 : GlobalAINight

位置 : West US

訂用帳戶 : Visual Studio Enterprise

訂用帳戶識別碼 : 4b17375d-57de-4803-a920-a7446a41ca4f

儲存空間 : globalainight8241269597

登錄 : ...

金鑰保存庫 : globalainight1734961975

Application Insights : globalainight2736086586

下載 config.json 刪除

快速入門

開始使用範例 Notebook (預覽)  
快速開始使用 Python SDK，並使用 Azure Machine Learning Notebook VM 執行範例實驗。

建立新的自動化機器學習模型 (預覽)  
自動從現有的資料建立模型。

使用視覺化介面建置模型 (預覽)  
拖放現有元件以建立新的模型。

檢視文件  
了解如何使用 Azure Machine Learning。

在 GitHub 檢視更多範例  
從機器學習範例的大集錦中獲得啟發。

檢視論壇  
加入 Azure Machine Learning 的討論。

2 資產

實驗

管線

計算

模型

影像

部署

活動

設定

屬性

# Launch Azure Machine Learning Visual Interface

The screenshot shows the Microsoft Azure portal interface. On the left, the sidebar lists various services like Resource Groups, Dashboards, and Application Services. The main content area shows the 'GlobalAINight - 視覺化介面' workspace under 'Machine Learning 服務工作區'. The page title is '視覺化介面 (預覽)'. A pink circle with the number '3' highlights the '啟動視覺化介面' (Launch Visual Interface) button, which is highlighted with a blue box. Below it is another button labeled '檢視文件' (View files). The sidebar also includes sections for Assets (Experiment, Pipeline, Compute, Model, Image, Deployment, Activity), Settings, and Properties.

Microsoft Azure

搜尋資源、服務及文件 (G+/)

建立資源

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資源群組

應用程式服務

SQL 資料庫

SQL 資料倉儲

Azure Cosmos DB

虛擬機器

負載平衡器

儲存體帳戶

虛擬網路

Azure Active Directory

監視

Advisor

資訊安全中心

成本管理 + 計費

說明 + 支援

搜尋 (Ctrl+ /)

首頁 > 所有資源 > GlobalAINight - 視覺化介面

GlobalAINight - 視覺化介面

Machine Learning 服務工作區

視覺化介面 (預覽)

視覺化介面的功能

- ✓ 拖放功能可建置機器學習模型
- ✓ 模型定型沒有資料大小或計算容量的限制
- ✓ 功能強大的內建 Python 支援
- ✓ 按一下即可部署 Web 服務
- ✓ 豐富且成長快速的模組支援

3

啟動視覺化介面

檢視文件

資產

實驗

管線

計算

模型

影像

部署

活動

設定

屬性

# Launch Azure Machine Learning Visual Interface

The screenshot shows the Azure Machine Learning Visual Interface. At the top, there is a dark header bar with the text "Visual interface (Preview) for Azure Machine Learning service" on the left and "GlobalAINight (West US)" with user icons on the right. Below the header is a navigation sidebar on the left with three items: "Experiments" (selected), "Web Services", and "Datasets". The main content area is titled "Experiments" and contains the message "No experiments have been created." At the bottom of the main area, there is a "Delete" button with a trash icon and a "New" button with a plus sign. The overall interface has a clean, modern design with a blue and white color scheme.

Visual interface (Preview) for Azure Machine Learning service

GlobalAINight (West US)

?

👤

Delete

+

New

Experiments

No experiments have been created.

Web Services

Datasets

20

# Dataset

The screenshot shows the 'Red Wine Quality' dataset page. At the top, there's a header with a 'Dataset' icon and the title 'Red Wine Quality'. Below the title is a subtitle: 'Simple and clean practice dataset for regression or classification modelling'. A 'UCI ML' logo is present, along with a note that it was updated 2 years ago (Version 2). The main navigation bar includes 'Data' (which is underlined), 'Kernels (209)', 'Discussion (7)', 'Activity', and 'Metadata'. To the right of the navigation are 'Download (26 KB)' and 'New Notebook' buttons, followed by a vertical ellipsis. Below the navigation, there are sections for 'Usability' (8.8), 'License' (Database: Open Database, Contents: Database Contents), and 'Tags' (beginner, natural and physical sciences, computing, education, food and drink). A large image of a wine glass filled with red wine is centered in the background.

## Kaggle Dataset

<https://www.kaggle.com/uciml/red-wine-quality-cortez-et-al-2009>

### Description

### Context

The two datasets are related to red and white variants of the Portuguese "Vinho Verde" wine. For more details, consult the reference [Cortez et al., 2009]. Due to privacy and logistic issues, only physicochemical (inputs) and sensory (the output) variables are available (e.g. there is no data about grape types, wine brand, wine selling price, etc.).

These datasets can be viewed as classification or regression tasks. The classes are ordered and not balanced (e.g. there are much more normal wines than excellent or poor ones).

# Dataset

1601 lines (1600 sloc) | 85.3 KB

Raw Blame History

Search this file...

cidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality	qualityBool
0.7	0	1.9	0.076	11	34	0.9978	3.51	0.56	9.4	5	0	
0.88	0	2.6	0.098	25	67	0.9968	3.2	0.68	9.8	5	0	
0.76	0.04	2.3	0.092	15	54	0.997	3.26	0.65	9.8	5	0	
0.28	0.56	1.9	0.075	17	60	0.998	3.16	0.58	9.8	6	1	
0.7	0	1.9	0.076	11	34	0.9978	3.51	0.56	9.4	5	0	
0.66	0	1.8	0.075	13	40	0.9978	3.51	0.56	9.4	5	0	
0.6	0.06	1.6	0.069	15	59	0.9964	3.3	0.46	9.4	5	0	
0.65	0	1.2	0.065	15	21	0.9946	3.39	0.47	10	7	1	
0.58	0.02	2	0.073	9	18	0.9968	3.36	0.57	9.5	7	1	
0.5	0.36	6.1	0.071	17	102	0.9978	3.35	0.8	10.5	5	0	
0.58	0.08	1.8	0.097	15	65	0.9959	3.28	0.54	9.2	5	0	
0.5	0.36	6.1	0.071	17	102	0.9978	3.35	0.8	10.5	5	0	
0.615	0	1.6	0.089	16	59	0.9943	3.58	0.52	9.9	5	0	
0.61	0.29	1.6	0.114	9	29	0.9974	3.26	1.56	9.1	5	0	
0.62	0.18	3.8	0.176	52	145	0.9986	3.16	0.88	9.2	5	0	
0.62	0.19	3.9	0.17	51	148	0.9986	3.17	0.93	9.2	5	0	
0.28	0.56	1.8	0.092	35	103	0.9969	3.3	0.75	10.5	7	1	
0.56	0.28	1.7	0.368	16	56	0.9968	3.11	1.28	9.3	5	0	

Today Dataset

<https://github.com/cassieview/wine-quality-azure-ml-visual-interface/blob/master/dataset/winequality-red.csv>

新增一個欄位 qualityBool

→ 當 quality > 5 = 1 ;  
當 quality <= 5 = 0

# Getting data into Azure Machine Learning Visual Interface

The screenshot shows the Azure Machine Learning Visual Interface. At the top, there is a dark header bar with the text "Visual interface (Preview) for Azure Machine Learning service" on the left, and "GlobalAINight (West US)" with user icons on the right.

The main area has a light gray background. On the left, a vertical blue sidebar contains three items: "Experiments" (selected), "Web Services", and "Datasets". A pink circle with the number "1" is positioned at the bottom left of the sidebar. At the bottom of the sidebar is a blue button labeled "+ New".

The central content area is titled "Experiments" and displays the message "No experiments have been created." There is a "Delete" button with a trash icon at the bottom right of this section.

In the bottom right corner of the slide, the number "23" is displayed.

# Getting data into Azure Machine Learning Visual Interface

The screenshot shows the Azure Machine Learning Visual Interface. At the top, there's a navigation bar with icons for help, user profile, and a search bar labeled "GlobalAINight (West US)". Below the bar, there are three main sections: "Experiments" (selected), "Web Services", and "Datasets". The "Experiments" section shows a message "No experiments have been created.". The "Datasets" section has a heading "New Datasets" and a button "Upload from Local File". A pink circle with the number "2" is overlaid on the "Experiments" icon. A pink box highlights the "Datasets" section, and another pink box highlights the "Upload from Local File" button.

Visual interface (Preview) for Azure Machine Learning service

GlobalAINight (West US)

?

Experiments

Web Services

Datasets

Experiments

No experiments have been created.

2

Experiments

New Datasets

X

Datasets

Upload from Local File

# Getting data into Azure Machine Learning Visual Interface

The screenshot shows the Azure Machine Learning Visual Interface. The top navigation bar includes the service name, location (GlobalAINight (West US)), and user profile. The left sidebar has three main categories: Experiments, Web Services, and Datasets. The 'Datasets' section is currently active, showing a message 'No experiments have been created.' Below it is the 'Upload New Dataset' dialog box.

**Upload New Dataset**

Select Data to Upload  
 winequality-red.csv

This is the new version of an existing dataset

New Dataset Name  
winequality-red.csv

Dataset Type  
Generic CSV File with a header (.csv)

Description (Optional)  
[Empty text area]

Cancel OK

At the bottom of the interface, there is a '+ New' button and a Delete icon.

# Getting data into Azure Machine Learning Visual Interface

The screenshot shows the 'Datasets' page in the Azure Machine Learning service. The left sidebar has a blue background with icons for Experiments, Web Services, and Datasets, with 'Datasets' selected. The main area title is 'Datasets'. Below it are tabs for 'My Datasets' (selected) and 'Samples'. A search bar at the top right says 'Search by name or description'. A table lists datasets with columns: Name, Data type, Size, Created on, and Description. One row is highlighted with a red border: 'winequality-red.csv', 'GenericCsv', '85.31 KB', '9/5/2019 4:33:15 PM', and an empty description field. At the bottom are 'Download' and 'Delete' buttons, and a 'New' button on the left.

Name	Data type	Size	Created on	Description
winequality-red.csv	GenericCsv	85.31 KB	9/5/2019 4:33:15 PM	

GlobalAINight (West US) ?

+ New Download Delete

# Create New Experiment

Visual interface (Preview) for Azure Machine Learning service GlobalAINight (West US) ? 🚧 😊

Experiments Web Services Datasets

## Datasets

My Datasets Samples

Search by name or description

### New Experiments

**Blank Experiment**

**Sample 1 - Regression: Automobile Price Prediction (Basic)**  
This sample experiment shows how to build a regression model to predict the automobile's price. [learn more](#)

**Sample 2 - Regression: Automobile Price Prediction (Compare Algorithm)**  
This sample experiment shows how to compare two regression models' performance on automobile ... [learn more](#)

**Sample 3 - Classification: Credit Risk Prediction (Basic)**  
This sample demonstrates how to perform binary classification to predict credit risk based on information given o... [learn more](#)

**Sample 4 - Classification: Credit Risk Prediction (Cost Sensitive)**

**Sample 5 - Classification: Customer Relationship Prediction**

**Sample 6 - Flight Delay Prediction (Execute R Script)**

X

# Create New Experiment

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? Properties

Wine Quality Model      点兩下可以編輯這個實驗的名字

To create your experiment, drag and drop datasets and modules here

Drag Items Here

Properties

Experiment Properties

Status code: InDraft  
Compute target: None

Summary

Description

Quick Help

Run History Save As Discard Changes Run Set Up Web Service

# Create New Experiment

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? Properties >

Wine Quality Model      In draft

Search experiment items

<      >

Saved Datasets

My Datasets

- winequality-red.csv (selected)
- Samples
- Data Format Conversions
- Data Input and Output
- Data Transformation
- Machine Learning
- Python Language Modules
- R Language Modules
- Web Service

Properties

winequality-red.csv

Submitted by	sinue625
Size	85.3 KB
Format	GenericCsv
Created on	9/5/2019 4:33....

[View dataset](#)

按住往右拖

Mini Map

winequality-red.csv

Run History      Save      Save As      Discard Changes      Run      Set Up Web Service

+ New

Quick Help

# Build the Model

Visual interface (Preview) for Azure Machine Learning service

GlobalAINight (West US) ?

Wine Quality Model In draft

Properties

**Edit Metadata**

Column  
Selected columns: Launch the selector tool to make a selection

Edit columns

Data type: Unchanged

Categorical: Unchanged

Fields: Unchanged

New column names:

Quick Help: Edits metadata associated with columns in a dataset (more help...)

Search experiment items

Saved Datasets  
My Datasets  
Samples

Data Format Conversions

Data Input and Output

**Data Transformation**

Manipulation  
Add Columns  
Add Rows  
Clean Missing Data  
**Edit Metadata** (highlighted with a red box and a hand cursor icon)  
Join Data  
Remove Duplicate Rows  
Select Columns in Data...  
Sample and Split  
Scale and Reduce  
Machine Learning  
Python Language Modules

按住往右拖

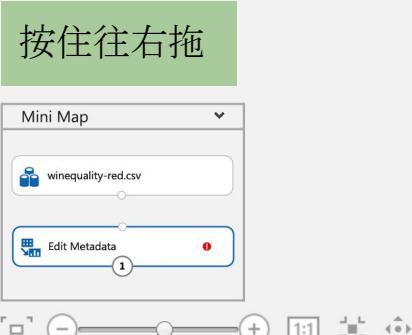
Mini Map

winequality-red.csv

Edit Metadata (highlighted with a red box and a hand cursor icon)

Run History Save Save As Discard Changes Run Set Up Web Service

+ New



30

# Build the Model

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? Properties >

Wine Quality Model      In draft

Search experiment items

Saved Datasets

- My Datasets
- Samples

Data Format Conversions

Data Input and Output

Data Transformation

- Manipulation
  - Add Columns
  - Add Rows
  - Clean Missing Data
  - Edit Metadata
  - Join Data
  - Remove Duplicate Rows
  - Select Columns in Data...
- Sample and Split
- Scale and Reduce
- Machine Learning
- Python Language Modules

winequality-red.csv dataset (GenericCsv)

Edit Metadata Results dataset (Dataset)

Mini Map

winequality-red.csv dataset (GenericCsv)

Edit Metadata Results dataset (Dataset)

Quick Help

Run History Save Discard Changes Run Set Up Web Service

# Build the Model

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? 🤖 😊 🧑

Wine Quality Model      In draft

Properties

Column  
Selected columns: Column names: qualityBool  
**Edit columns**

1

Data type  
Boolean

3

Allow duplicates and preserve column order in selection

With Rules

Begin With All Columns No Column 2

Include column names qualityBool

將 qualityBool 的資料型態轉成 Boolean

OK

Quick Help

Edits metadata associated with columns in a dataset  
(more help...)

Run History Save As Discard Changes Run Set Up Web Service

Search experiment items

Saved Datasets  
My Datasets Samples

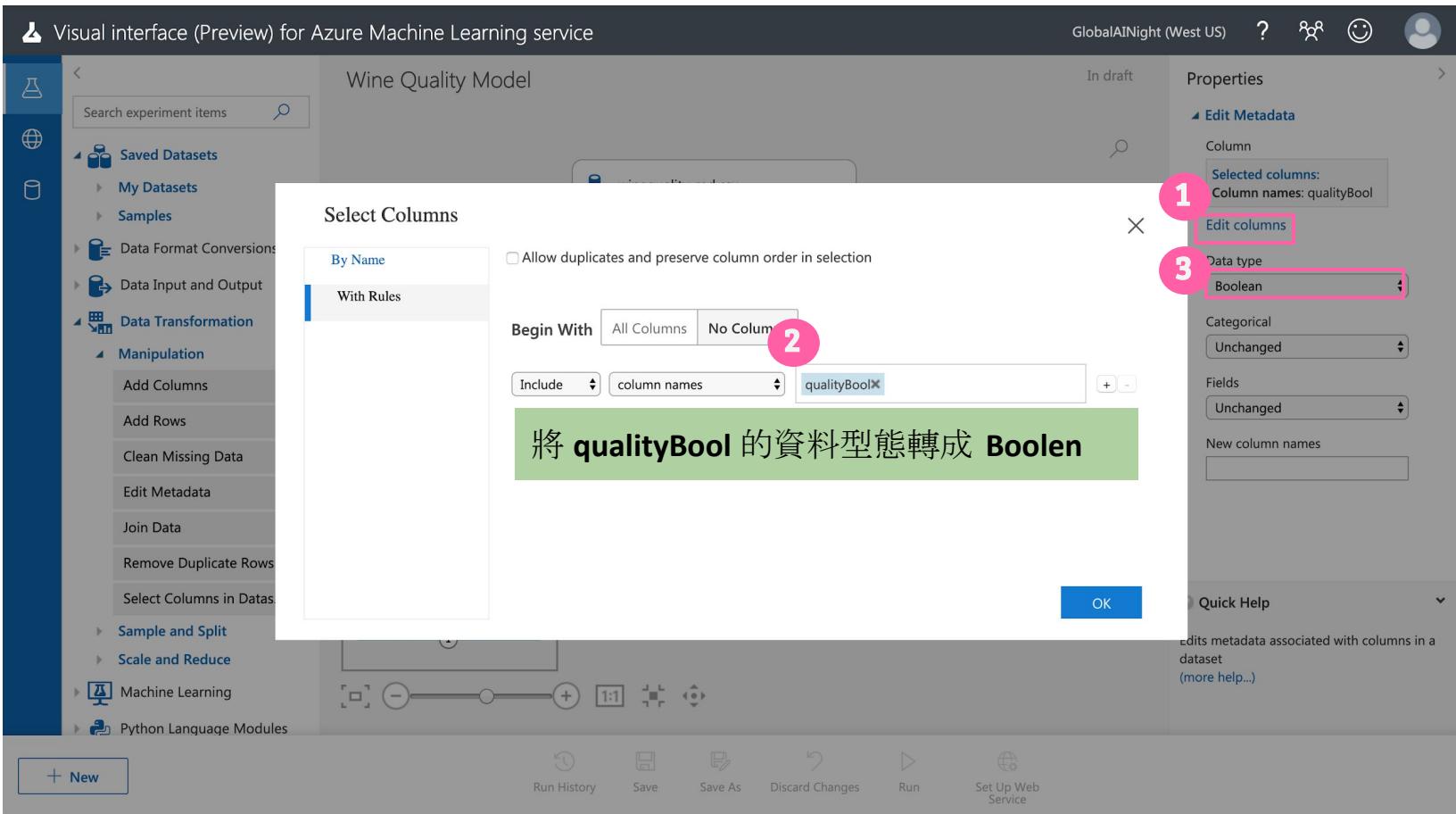
Data Format Conversions  
Data Input and Output

Data Transformation  
Manipulation  
Add Columns  
Add Rows  
Clean Missing Data  
Edit Metadata  
Join Data  
Remove Duplicate Rows  
Select Columns in Dataset

Sample and Split  
Scale and Reduce

Machine Learning  
Python Language Modules

+ New



32

# The First Run of the Experiment

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? Properties >

Wine Quality Model      In draft

Search experiment items

Saved Datasets

- My Datasets
- Samples

Data Format Conversions

Data Input and Output

Data Transformation

- Manipulation
  - Add Columns
  - Add Rows
  - Clean Missing Data
  - Edit Metadata
  - Join Data
  - Remove Duplicate Rows
  - Select Columns in Data...
- Sample and Split
- Scale and Reduce
- Machine Learning
- Python Language Modules

winequality-red.csv

dataset (GenericCsv)

Edit Metadata

Run History Save As Discard Changes Run Set Up Web Service

Properties

Experiment Properties

- Status code: InDraft
- Compute target: None

Summary

Enter a few sentences describing your experiment (up to 140 characters).

Description

Enter the detailed description for your experiment.

Quick Help

Run

33

# The First Run of the Experiment

Visual interface (Preview) for Azure Machine Learning service

GlobalAINight (West US) ?

Setup Compute Target to Run Experiment

Compute target **1**

Select existing  Create new

Compute configuration

We recommend using below predefined configuration to quickly setup your compute.

Configuration	vCPU	RAM	Storage	Node count
Predefined	2	4GB	8GB	2

**2** Not suitable for your experiment? Go to [Azure Portal](#) to create your customized compute target.

New compute name [\(i\)](#)  
WineQuality

Note: Compute preparation takes time, may be a few minutes or even longer. Experiment will start to run as soon as the compute resource is available.

In draft

Properties

Experiment Properties

Status code	InDraft
Compute target	None

Summary

Enter a few sentences describing your experiment (up to 140 characters).

Description

Enter the detailed description for your experiment.

Quick Help

Cancel **3** Run

Run History Save Save As Discard Changes Run Set Up Web Service

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# The First Run of the Experiment

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US)      ?                    

Wine Quality Model      Finished running ✓

Search experiment items

- Saved Datasets
- Data Format Conversions
- Data Input and Output
- Data Transformation
- Machine Learning
- Python Language Modules
- R Language Modules
- Web Service

winequality-red.csv

Edit Metadata ✓

Download  
Save as Dataset  
Save as Trained Model  
Save as Transform  
**Visualize** (highlighted)  
Generate Data Access Code

右鍵, 選 Visualize ; 可以看個欄位分佈

New

Run History   Save As   Discard Changes   Run   Set Up Web Service

# The First Run of the Experiment

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model>Edit Metadata>Results dataset

Rows 1599 Columns 13

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH
View as									
	7.4	0.7	0	1.9	0.076	11	34	0.9978	3.51
	7.8	0.88	0	2.6	0.098	25	67	0.9968	3.2
	7.8	0.76	0.04	2.3	0.092	15	54	0.997	3.26
	11.2	0.28	0.56	1.9	0.075	17	60	0.998	3.16
	7.4	0.7	0	1.9	0.076	11	34	0.9978	3.51
	7.4	0.66	0	1.8	0.075	13	40	0.9978	3.51
	7.9	0.6	0.06	1.6	0.069	15	59	0.9964	3.3
	7.3	0.65	0	1.2	0.065	15	21	0.9946	3.39
	7.8	0.58	0.02	2	0.073	9	18	0.9968	3.36
	7.5	0.5	0.36	6.1	0.071	17	102	0.9978	3.35
	6.7	0.58	0.08	1.8	0.097	15	65	0.9959	3.28
	7.5	0.5	0.36	6.1	0.071	17	102	0.9978	3.35
	5.6	0.615	0	1.6	0.089	16	59	0.9943	3.58
	7.8	0.61	0.29	1.6	0.114	9	29	0.9974	3.26
	9.0	0.62	0.19	2.8	0.176	52	145	0.9986	3.16

To view, select a column in the table.

+ New Run History Save As Discard Changes Run Set Up Web Service

# Select Feature Columns

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model      In draft      Draft saved at 5:14:09 PM

Properties

**Experiment Properties**

Start time	9/5/2019 5:02:...
End time	9/5/2019 5:09:...
Status code	InDraft
Status details	None
Compute target	WineQuality

**Summary**  
Enter a few sentences describing your experiment (up to 140 characters).

**Description**  
Enter the detailed description for your experiment.

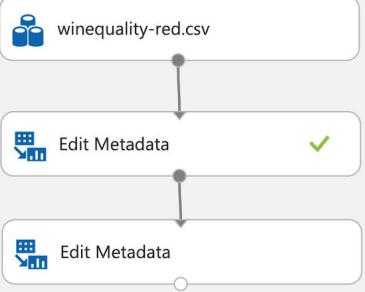
**Quick Help**

Search experiment items

Saved Datasets  
Data Format Conversions  
Data Input and Output  
**Data Transformation**  
Edit Metadata

Manipulation  
Add Columns  
Add Rows  
Clean Missing Data  
**Edit Metadata**  
Join Data  
Remove Duplicate Rows  
Select Columns in Data...

Sample and Split  
Scale and Reduce  
Machine Learning  
Python Language Modules  
R Language Modules



+ New      Run History      Save      Save As      Discard Changes      Run      Set Up Web Service

# Select Feature Columns

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model      In draft      Draft saved at 5:14:09 PM

winequality-red.csv

Properties

**Edit Metadata**

Column  
Selected columns: Launch the selector tool to make a selection

Edit columns

Data type: Unchanged

Categorical: Unchanged

Fields: Unchanged

New column names:

Quick Help: Edits metadata associated with columns in a dataset (more help...)

Search experiment items

Saved Datasets

Data Format Conversions

Data Input and Output

**Data Transformation**

Manipulation

- Add Columns
- Add Rows
- Clean Missing Data
- Edit Metadata
- Join Data
- Remove Duplicate Rows
- Select Columns in Dataset

Sample and Split

Scale and Reduce

Machine Learning

Python Language Modules

R Language Modules

+

Run History

Save

Save As

Discard Changes

Run

Set Up Web Service

Select Columns

By Name

Available Columns

With Rules

All Types search columns

quality

我們已經選擇使用 **qualityBool**, 就不需要 **quality**

1 columns available

Selected Columns

All Types search columns

fixed acidity  
volatile acidity  
citric acid  
residual sugar  
chlorides  
free sulfur dioxide  
total sulfur dioxide  
density  
pH  
sulphates  
alcohol  
qualityBool

12 columns selected

OK

# Split the Data

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model

In draft      Saving...

Properties

**Split Data**

Splitting mode: Split Rows

Fraction of rows in the first output: 0.7

Randomized split

Random seed: 0

Stratified split: False

**Quick Help**

Partitions the rows of a dataset into two distinct sets  
[\(more help...\)](#)

Search experiment items

Saved Datasets

Data Format Conversions

Data Input and Output

**Data Transformation**

- Manipulation
- Sample and Split**
- Partition and Sample
- Split Data**
- Scale and Reduce
- Normalize Data
- Machine Learning
- Python Language Modules
- R Language Modules
- Web Service

Input

Output

+ New

Run History

Save

Save As

Discard Changes

Run

Set Up Web Service

# Train, Score and Evaluate the Model

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? ☺ 🚧

Wine Quality Model

In draft      Saving... 🔍

**Properties**

**Experiment Properties**

Start time	9/5/2019 5:02:...
End time	9/5/2019 5:09:...
Status code	InDraft
Status details	None
Compute target	WineQuality

**Summary**  
Enter a few sentences describing your experiment (up to 140 characters).

**Description**  
Enter the detailed description for your experiment.

**Quick Help**

**Data Transformation**

- Manipulation
  - Join Data
- Sample and Split
  - Split Data

**Machine Learning**

- Initialize Model
  - Classification
    - Multiclass Neural Ne...
    - Two-Class Averaged ...
    - Two-Class Boosted ...
    - Two-Class Decision F...
    - Two-Class Logistic R...
    - Two-Class Neural Ne...
    - Two-Class Support V...
  - Regression
    - Neural Network Reg...

Two-Class Logistic Regression → Train Model

Split Data → Train Model

Train Model → Score Model

Score Model → Evaluate Model

Evaluate Model →

Run History   Save As   Discard Changes   Run   Create Predictive Experiment

+ New

```
graph TD; A[winequality-red.csv] --> B[Edit Metadata]; B --> C[Edit Metadata]; C --> D[Two-Class Logistic Regression]; D --> E[Split Data]; E --> F[Train Model]; F --> G[Score Model]; G --> H[Evaluate Model];
```

# Train, Score and Evaluate the Model

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model      In draft      Draft saved at 5:23:32 PM

two

Energy Efficiency Regres...

Data Transformation

- Manipulation
  - Join Data
- Sample and Split
  - Split Data
- Machine Learning
- Initialize Model
  - Classification
    - Multiclass Neural Ne...
    - Two-Class Averaged
    - Two-Class Boosted ...
    - Two-Class Decision F...
    - Two-Class Logistic R...
    - Two-Class Neural Ne...
    - Two-Class Support V...
  - Regression
    - Neural Network Reg...

Select a single column

By Name With Rules column names qualityBool

OK

Trains a classification or regression model in a supervised manner  
[\(more help...\)](#)

Run History Save As Discard Changes Run Create Predictive Experiment

+ New

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# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Wine Quality Model      Finished running ✓

Properties

**Experiment Properties**

Start time	9/5/2019 5:29:...
End time	9/5/2019 5:36:...
Status code	Finished
Status details	None
Compute target	WineQuality

Prior Run

**Summary**  
Enter a few sentences describing your experiment (up to 140 characters).

**Description**  
Enter the detailed description for your experiment.

**Quick Help**

Search experiment items

Saved Datasets  
Data Format Conversions  
Data Input and Output  
Data Transformation  
Machine Learning  
Python Language Modules  
R Language Modules  
Web Service

Two-Class Logistic Regression ✓  
Edit Metadata ✓  
Edit Metadata ✓  
Split Data ✓  
Train Model ✓  
Score Model ✓  
Evaluate Model ✓

Winequality-red.csv

Create predictive experiment

42

# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ? Properties

Training experiment    Predictive experiment    Wine Quality Model [Predictive Exp.]    In draft    Draft saved at 5:37:18 PM

Web service input  
winequality-red.csv  
Edit Metadata  
Edit Metadata  
Wine Quality Model [trained...]  
Score Model  
Web service output

Properties

Experiment Properties

Start time	9/5/2019 5:29:...
End time	9/5/2019 5:36:...
Status code	InDraft
Status details	None
Compute target	WineQuality

Summary

Enter a few sentences describing your experiment (up to 140 characters).

Description

Enter the detailed description for your experiment.

Quick Help

Input    Output

Run History    Save As    Discard Changes    Run    Deploy Web Service

+ New

# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service      GlobalAINight (West US) ?

Training experiment    Predictive experiment    Wine Quality Model [Predictive Exp.]    Finished running ✓

Properties

**Experiment Properties**

Start time	9/5/2019 5:40:...
End time	9/5/2019 5:45:...
Status code	Finished
Status details	None
Compute target	WineQuality

**Summary**  
Enter a few sentences describing your experiment (up to 140 characters).

**Description**  
Enter the detailed description for your experiment.

Quick Help

Search experiment items

Saved Datasets  
Trained Models  
Data Format Conversions  
Data Input and Output  
Data Transformation  
Machine Learning  
Python Language Modules  
R Language Modules  
**Web Service**

Input  
Output

Diagram:

```
graph TD; WSInput[Web service input] --> CSV[winequality-red.csv]; CSV --> EM1>Edit Metadata; EM1 --> EM2>Edit Metadata; EM2 --> WQM[Wine Quality Model [trained...]]; WQM --> ScoreModel[Score Model]; ScoreModel --> WSOutput[Web service output]
```

Bottom icons: Run History Save Save As Discard Changes Run Deploy Web Service

# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service

GlobalAINight (West US) ? 🌐 😊 🚙

Setup Compute Target to Deploy Web Service

Compute target

Select existing  Create new

Please follow the Instruction Doc to create secure compute for deployment. [View Instruction Doc.](#)  
You can create compute in Azure Portal as below steps too, but it will not support secure web service and it will be on your risk. [Go to Azure Portal.](#)

1 Select "Add Compute"

Compute

+ Add Compute ⏪ Refresh ⏧ Delete ⏧ Detach

There are no computes in this workspace.

2 Define compute settings

For Compute type, choose "Kubernetes Service".  
Select the Virtual machine size that fits your needs or keep the default.

Add Compute

\* Compute name:   
\* Compute type: Kubernetes Service  
\* Kubernetes Service:  Create new  Use existing  
\* Region: Pick a region  
\* Virtual machine size: Standard\_D3\_v2  
\* Number of nodes: 3  
\* Network configuration: Basic

Cancel Deploy

Properties

Experiment Properties

Start time: 9/5/2019 5:40:...  
End time: 9/5/2019 5:45:...  
Status code: Finished  
Status details: None  
Compute target: WineQuality

Summary

Enter a few sentences describing your experiment (up to 140 characters).

Description

Enter the detailed description for your experiment.

Quick Help

Run History Save Save As Discard Changes Run Deploy Web Service

+ New

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# Deploy the Web Service

Microsoft Azure

首頁 > AI-Night - 計算

AI-Night - 計算  
Machine Learning 服務工作區

建立資源 首頁 儀表板 所有服務 我的最愛 所有資源 資源群組 應用程式服務 SQL 資料庫 SQL 資料倉儲 Azure Cosmos DB 虛擬機器 負載平衡器 儲存體帳戶 虛擬網路 Azure Active Directory 監視 Advisor 資訊安全中心 成本管理 + 計費 說明 + 支援 屬性

搜尋資源、服務及文件 (G+/)

實驗 管線 Compute 模型 映像 部署 活動

新增 Compute

Compute 名稱: Test  
計算類型: Kubernetes Service  
區域: West US 2  
虛擬機器大小: Standard\_D3\_v2  
節點數: 3  
網路組態: 基本

Kubernetes Service

1 計算 2 新增 Compute

建立 取消

sinue625@hotmail.com 預設目錄

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# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service

AI-Night (West US 2) ?

Properties

**Experiment Properties**

Start time	9/5/2019 6:26:...
End time	9/5/2019 6:28:...
Status code	Finished
Status details	None
Compute target	AINight

**Summary**

Enter a few sentences describing your experiment (up to 140 characters).

**Description**

Enter the detailed description for your experiment.

Quick Help

Setup Compute Target to Deploy Web Service

Compute target

Select existing  Create new

Existing compute target(s)

Compute name	Node Count	Region	Status
Test	3	West US 2	Succeeded

Note: Compute preparation takes time, may be a few minutes or even longer. Deployment will start as soon as the compute resource is available.

Cancel Deploy

Run History Save Save As Discard Changes Run Deploy Web Service

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# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service

AI-Night (West US 2) ? 🌐 😊 🧑

Experiments Web Services Datasets

## Web Services

Search by name

Name	Created on	Last Updated
Wine Quality [Predictive Exp.]	9/5/2019 7:46:40 PM	9/5/2019 7:50:51 PM

+ New

Delete

# Deploy the Web Service

Visual interface (Preview) for Azure Machine Learning service

AI-Night (West US 2) ? 🧑‍🤝‍🧑 😊

< Web Services

## Wine Quality [Predictive Exp.]

General Test Consume API Doc

Compute target Test

ⓘ This is an insecure web service due to the limitation with your AKS. You can continue to use it but it will be on your risk. It's recommended to follow the Instruction Doc to secure your web service. [View Instruction Doc.](#)

Deployment state Healthy

Operation Status Create - Succeeded - 9/5/2019 7:50:51 PM

Region West US 2

Created on 9/5/2019 7:46:40 PM

Last Updated 9/5/2019 7:50:51 PM

Description No description provided for this web service.

[View deployment](#)

[View experiment snapshot](#)

[View latest experiment](#)

+ New

Delete



# Note

# Reference

- Github
  - <https://github.com/cassieview/wine-quality-azure-ml-visual-interface/>