Machine
Learning

Microsoft

Azure Machine Learning Studio Lab

- Publishing

Objectives

In this lab, we will continue to use the experiment to predict a car's price further to deploy the model, by publishing an API to expose the model we have created.

Publishing a Web Service

The 'UCL ML Studio Lab' experiment from the previous labs is ready to be published and should look like below. Note that every module contains a green tick next to it. The model can then be published to the Azure ML Web API service (to use as a web service or a REST endpoint).
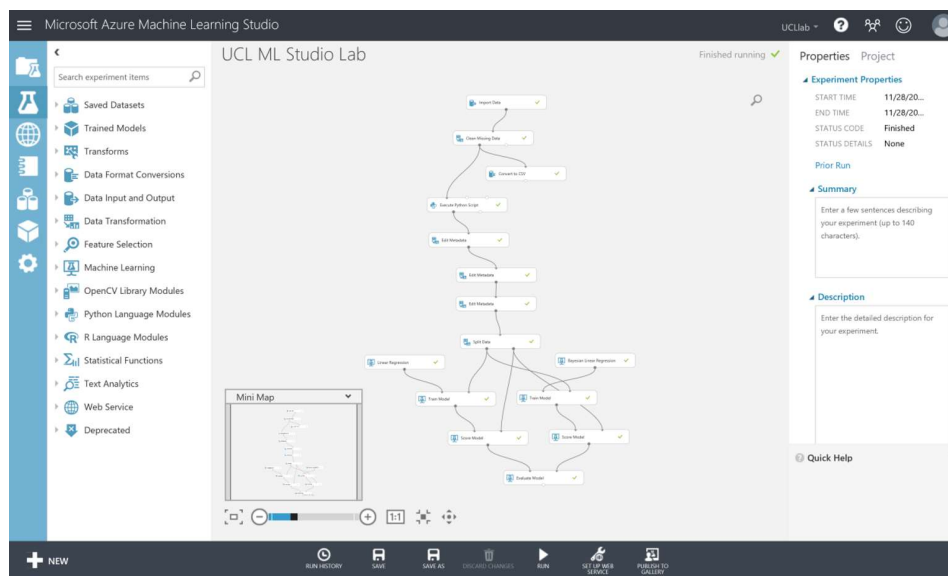
Ensure the experiment runs successfully and there are green ticks next to each module. Choose 'Set up web service' and choose the 'Predictive Web Service (Recommended)' option on the bottom tool bar. The experiment now gets redrawn to create a new Predictive experiment tab at the top of the screen.
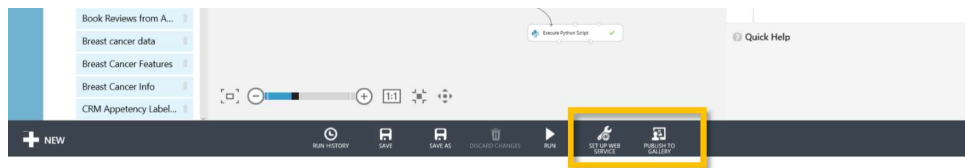
The original experiment gets put in the Training Tab. The concept behind the predictive experiment is to use the trained model to score new data as an Azure Web service.

When the web service is accessed, the user's data enters through the **Web service input** module where it's passed to the Score Model module and scored. The way the predictive experiment is set up is such that the model expects data in the same format as the original input. The results are returned to the user from the web service through the **Web service output** module. You can also move the Web service input to different modules.
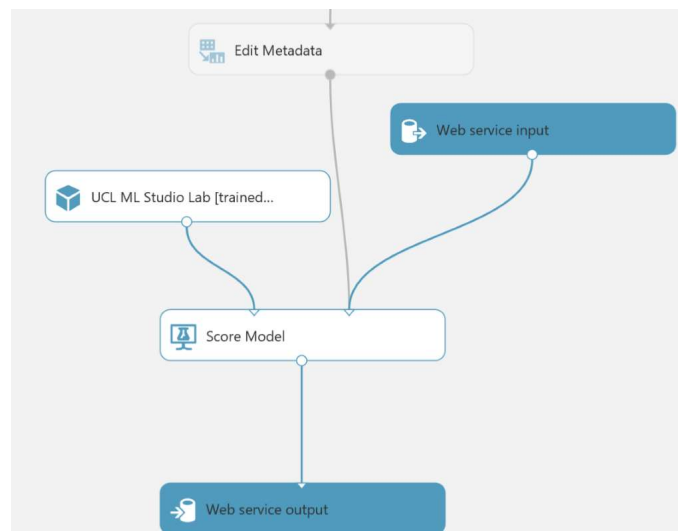
Run the predictive experiment to validate the predictive experiment before publishing it as web service. After a successful run, the deploy web service icon is available on the bottom toolbar as shown below:

Select Deploy Service and you will be taken to Dashboard as shown below.

Notice there are two APIs to test:

1. Request/Response
    a. This allows you to test by entering data manually to predict
2. Batch Execution
    a. On clicking Test in the Batch Execution row, you will see:

In the Batch testing page, you can also test batch files of data to receive multiple predictions back. Click the browse button to select files and choose test to run prediction.

Logging

To help troubleshoot your calls to the Machine Learning APIs, logging can be enabled using the following steps. When logging is enabled, all the diagnostics and errors from the selected endpoint are logged to the Azure Storage Account linked with the user's workspace.

To enable logging in Web Services in the Azure classic portal:

1. Sign in to Azure classic portal
2. In the left features column, click **MACHINE LEARNING**.
3. Click your workspace, then **WEB SERVICES**.
4. In the Web services list, click the name of the Web service.
5. In the endpoints list, click the endpoint name.
6. Click **CONFIGURE**.
7. Set **DIAGNOSTICS TRACE LEVEL** to *Error* or *All*, then click **SAVE**.

To enable logging in the Azure Machine Learning Web Services portal.

1. Sign into the Azure Machine Learning Web Services portal.
2. Click Classic Web Services.
3. In the Web services list, click the name of the Web service.
4. In the endpoints list, click the endpoint name.
5. Click **Configure**.
6. Set **Logging** to *Error* or *All*, then click **SAVE**.

Conclusion

This lab introduced you to different ways of publishing your machine learning model as a web service.