Machine Learning

Microsoft

Azure Machine Learning Studio Lab

- Comparison of Algorithms

Objectives

Model Comparison

- We will continue to build on the previous lab to investigate and compare different algorithms
- Perform evaluation to pick the "best" model for your problem

Setup

Open the experiment from the previous lab and add 'Bayesian Linear Regression' algorithm to the experiment studio. Go to the modules pane on the left of the screen and find the section:
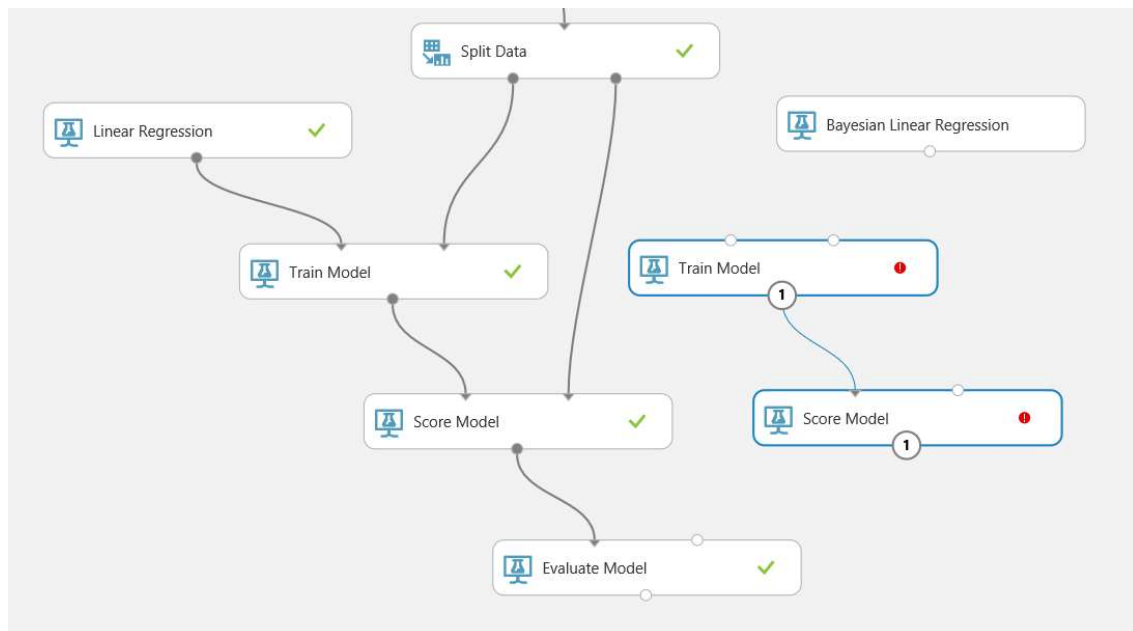
Machine Learning -> Initialise Model -> Regression -> Bayesian Linear Regression
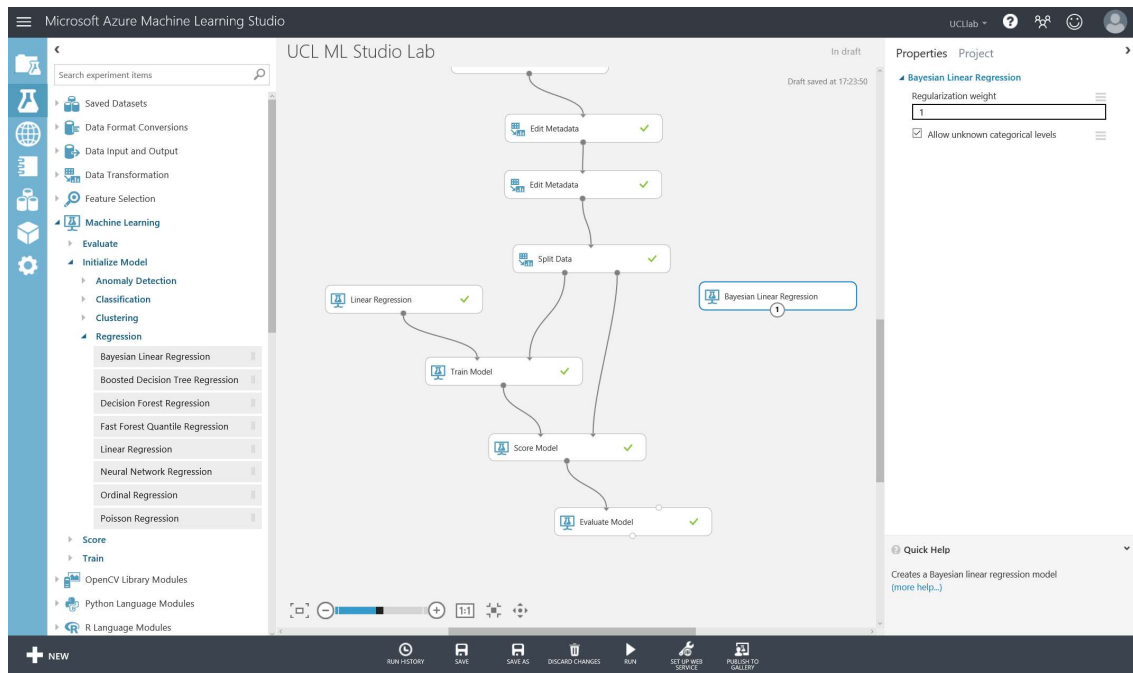

Note: In order to quickly recreate the steps (train, score and evaluate setup with the same parameters) you can click and select multiple modules:
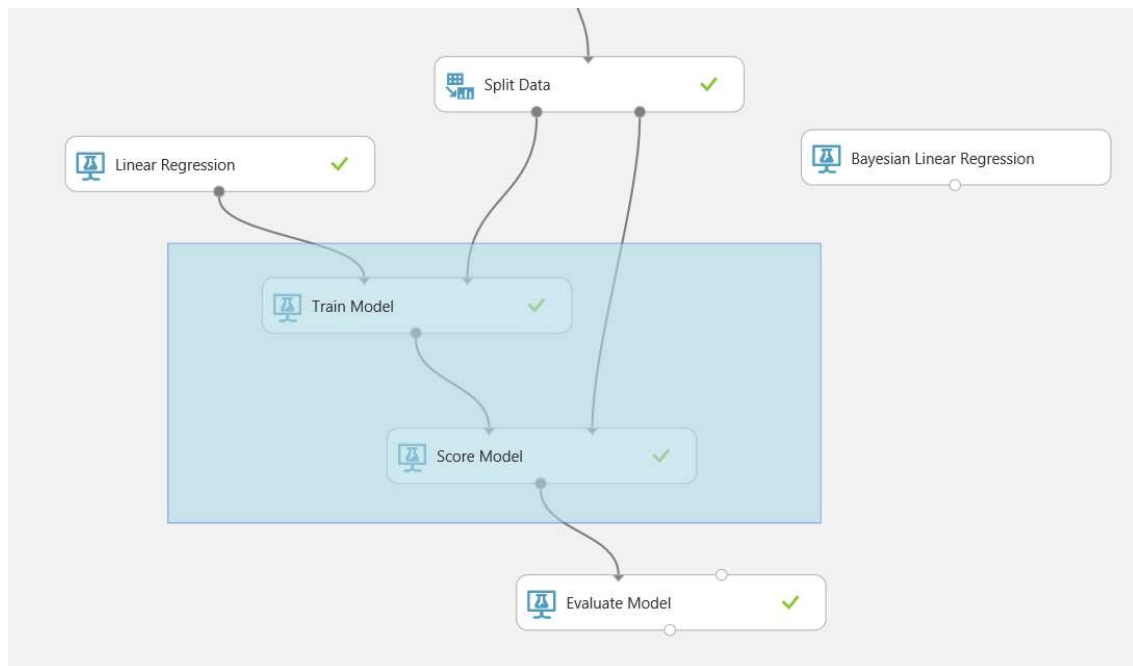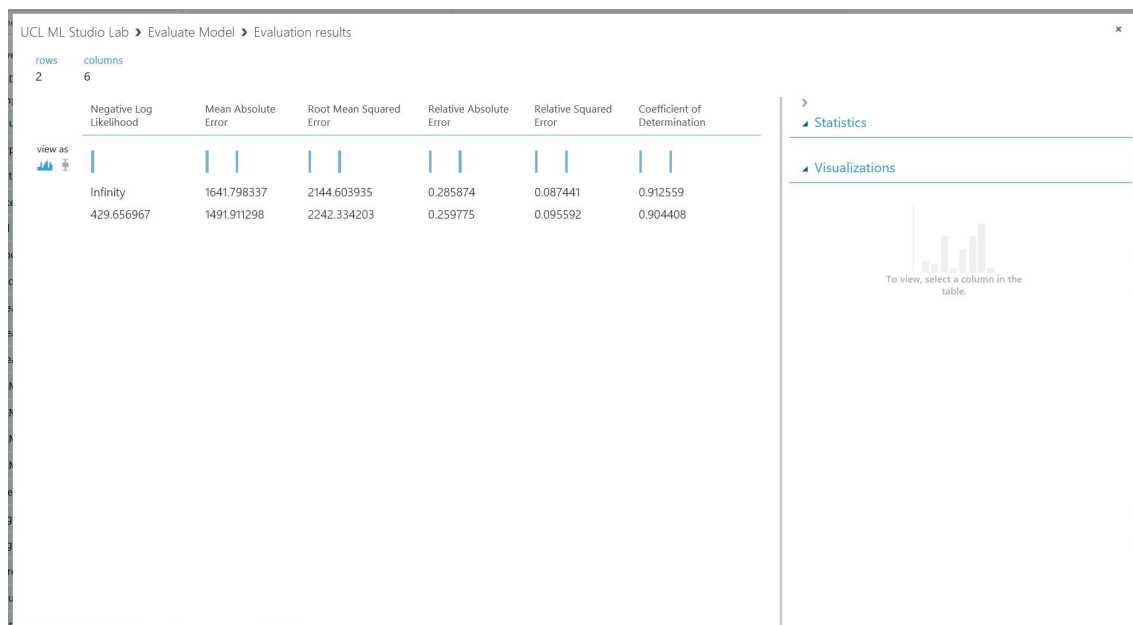
Use the hot keys: ctrl+c and ctrl+v to copy and paste the models

Connect the modules as shown below, so that the algorithm and training dataset are connected to then Train Model module, and the testing dataset is connected to the Score Model module. Ensure the output of the recently copied Score Model module is connected to the right input port of the Evaluate Model module.
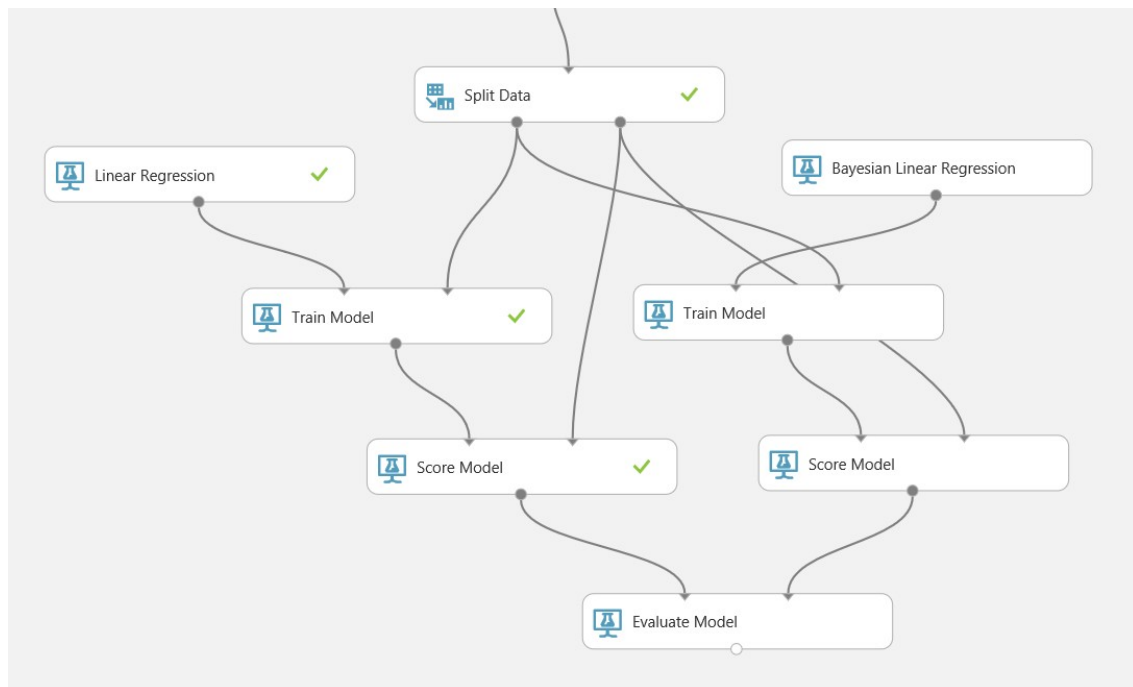
Run the experiment. Once complete, right click and visualise the Evaluate module.

UCL ML Studio Lab ▸ Evaluate Model ▸ Evaluation results

	Negative Log Likelihood	Mean Absolute Error	Root Mean Squared Error	Relative Absolute Error	Relative Squared Error	Coefficient of Determination
	Infinity	1641.798337	2144.603935	0.285874	0.087441	0.912559
	429.656967	1491.911298	2242.334203	0.259775	0.095592	0.904408

Compare the two algorithms and note that the Mean Absolute Error is slightly lower for the Bayesian Linear Regression. However, the Root Mean Squared error is slightly higher, so these two models are similar in accuracy.

- Which model is better for predicting the price of a car?

- Can we improve the models further?

Conclusion

This lab introduced you to how to quickly compare different machine learning algorithms using the Azure Machine Learning Studio.