Tune Hyperparameters

Hyperparameters are variables that affect how a model is trained, but which can't be derived from the training data. Choosing the optimal hyperparameter values for model training can be difficult, and usually involved a great deal of trial and error.

In this exercise, you'll use Azure Machine Learning to tune hyperparameters by performing multiple training runs in parallel.

Before You start

If you have not already done so, complete the *Create an Azure Machine Learning Workspace* exercise to create an Azure Machine Learning workspace and compute instance, and clone the notebooks required for this exercise.

Open Jupyter

While you can use the **Notebooks** page in Azure Machine Learning studio to run notebooks, it's often more productive to use a more fully-featured notebook development environment like *Jupyter*.

1. In Azure Machine Learning studio, view the **Compute** page for your workspace; and on the **Compute Instances** tab, start your compute instance if it is not already running.
2. When the compute instance is running, click the **Jupyter** link to open the Jupyter home page in a new browser tab.

Run a hyperparameter tuning experiment

In this exercise, the code to run a hyperparameter tuning experiment is provided in a notebook.

1. In the Jupyter home page, browse to the **Users/mslearn-dp100** folder where you cloned the notebook repository, and open the **Tune Hyperparameters** notebook.
2. Then read the notes in the notebook, running each code cell in turn.
3. When you have finished running the code in the notebook, on the **File** menu, click **Close and Halt** to close it and shut down its Python kernel. Then close all Jupyter browser tabs.

Clean-up

If you're finished working with Azure Machine Learning for now, in Azure Machine Learning studio, on the **Compute** page, on the **Compute Instances** tab, select your compute instance and click **Stop** to shut it down. Otherwise, leave it running for the next lab.