Start Lab   01:00:00

Introducing the Keras Sequential API

1 hour   Free   ★★★★☆

Overview

Duration is 1 min

In this lab, you will see how to build a simple deep neural network model using the Keras Sequential API and Feature Columns.

Once you have trained your model, you will deploy it using AI Platform and see how to call the model for online prediciton.

What you learn

In this lab, you will:

- Build a DNN model using the Keras Sequential API

- Learn how to use feature columns in a Keras model

- Learn how to train a model with Keras

- Learn how to save/load, and deploy a Keras model on GCP

- Learn how to deploy and make predictions with at Keras model

Setup

For each lab, you get a new Google Cloud project and set of resources for a fixed time at no cost.

1. Make sure you signed into Qwiklabs using an **incognito window**.

2. Note the lab's access time (for example, **02:00:00** and make sure you can finish in that time block.

> There is no pause feature. You can restart if needed, but you have to start at the beginning.

3. When ready, click   **START LAB**   .

4. Note your lab credentials. You will use them to sign in to the Google Cloud Console.

Open Google Console

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. **Learn more.**

Username

google2876526_student@qwiklabs.n

Password

TG959yrKDX

GCP Project ID

qwiklabs-gcp-0855e773352d3560

New to labs? View our introductory video!

5. Click **Open Google Console**.

6. Click **Use another account** and copy/paste credentials for **this** lab into the prompts.

> If you use other credentials, you'll get errors or **incur charges**.

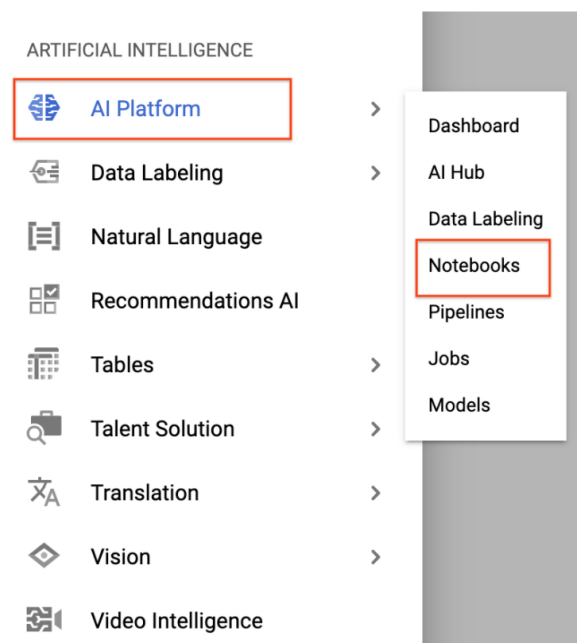7. Accept the terms and skip the recovery resource page.

> Do not click **End Lab** unless you are finished with the lab or want to restart it. This clears your work and removes the project.

Launch AI Platform Notebooks

To launch AI Platform Notebooks:

Step 1

Click on the **Navigation Menu**. Navigate to **AI Platform**, then to **Notebooks**.

Step 2

On the Notebook instances page, click ✚ NEW INSTANCE . Select the latest version of TensorFlow Enterprise `2.x` *Without GPUs*.
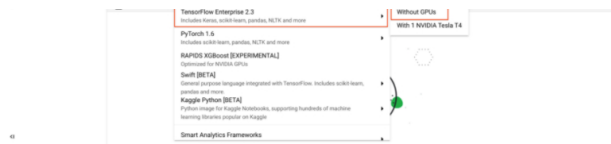
In the pop-up, confirm the name of the deep learning VM, move to the bottom of the window and click **Create**.

The new VM will take 2-3 minutes to start.

Step 3

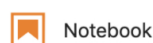Click **Open JupyterLab**. A JupyterLab window will open in a new tab.
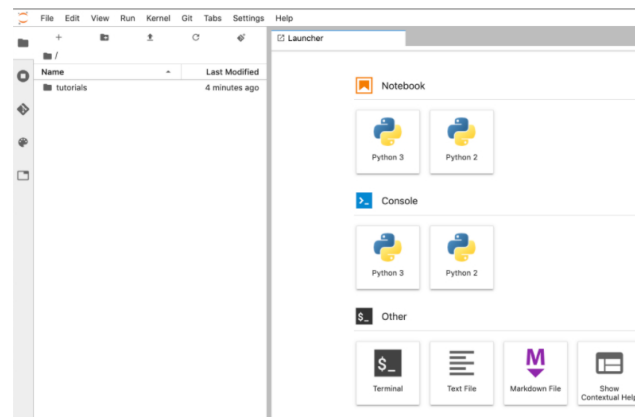
Clone course repo within your AI Platform Notebooks instance

To clone the `training-data-analyst` notebook in your JupyterLab instance:

Step 1

In JupyterLab, click the **Terminal** icon to open a new terminal.

Notebook

Step 2

At the command-line prompt, type in the following command and press **Enter**.

```
git clone https://github.com/GoogleCloudPlatform/training-data-analyst
```

Step 3

Confirm that you have cloned the repository by double clicking on the `training-data-analyst` directory and ensuring that you can see its contents. The files for all the Jupyter notebook-based labs throughout this course are available in this directory.

Keras Sequential API

Duration is 45 min

Step 1

In the notebook interface, navigate to **training-data-analyst > courses > machine_learning > deepdive2 > introduction_to_tensorflow > labs** and open

machine_learning > deepdive2 > introduction_to_tensorflow > labs and open
3_keras_sequential_api.ipynb.

Step 2

In the notebook interface, click on **Edit > Clear All Outputs** (click on Edit, then in the drop-down menu, select Clear All Outputs).

Carefully read through the notebook instructions and fill in lines marked with #TODO where you need to complete the code as needed

Tip: To run the current cell you can click the cell and hit **shift+enter**. Other cell commands are found in the notebook UI under **Run**.

- Hints may also be provided for the tasks to guide you along. Highlight the text to read the hints (they are in white text).
- If you need more help, you may take a look at the complete solution by navigating to **training-data-analyst > courses > machine_learning > deepdive2 > introduction_to_tensorflow > solutions** and open **3_keras_sequential_api.ipynb**.

End your lab

When you have completed your lab, click **End Lab**. Qwiklabs removes the resources you've used and cleans the account for you.

You will be given an opportunity to rate the lab experience. Select the applicable number of stars, type a comment, and then click **Submit**.

The number of stars indicates the following:

- 1 star = Very dissatisfied
- 2 stars = Dissatisfied
- 3 stars = Neutral
- 4 stars = Satisfied
- 5 stars = Very satisfied

You can close the dialog box if you don't want to provide feedback.

For feedback, suggestions, or corrections, please use the **Support** tab.