

Jupyter Notebook

Jupyter Notebook

The LLM630 Compute Kit comes pre-installed with [Jupyter Notebook](#) to facilitate learning and development. This tutorial provides a simple project example to guide you through using `pyaxengine` to run inference with the Yolo11n model for object detection.

1.Preparation

- Refer to the [LLM630 Compute Kit - Config](#) tutorial to learn how to configure the network and file transfer on the LLM630 Compute Kit, and obtain the device' s IP address.
- Download the LLM630 Compute Kit Jupyter Notebook project zip file below and extract it.

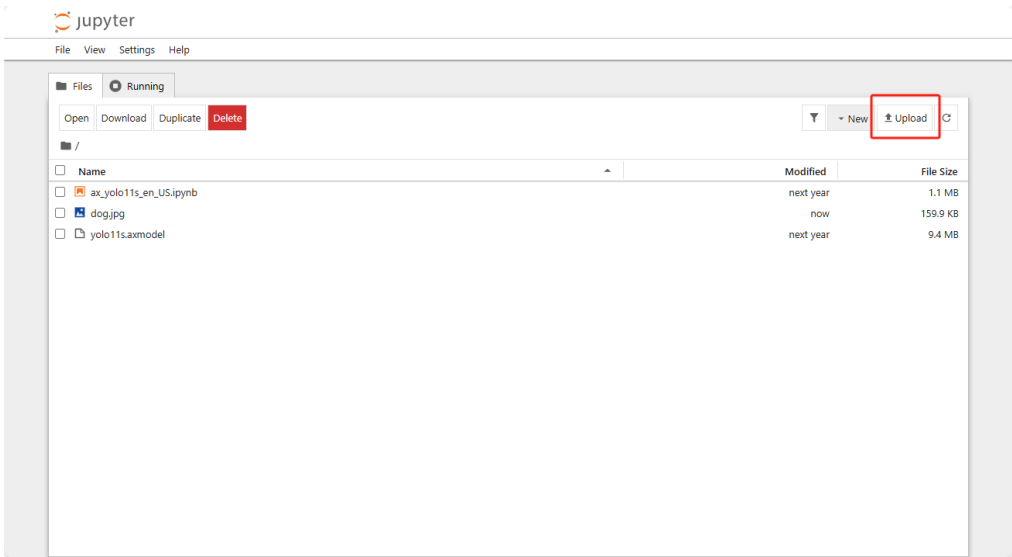
Software Version	Download Link
llm630_compute_kit_jupyter_project_for_yolo11s_v1.0	Download

2.Access Jupyter Notebook

A PC on the same network can access the Jupyter Notebook web page at the device IP address (default port: 8888).

`http://{IP}:8888`

Click **Upload** to upload the project files to your workspace, and then double-click to open the project file.



3.Test and Run

This example requires certain dependent packages to be installed over the network, so a stable network connection is needed on the device.

Follow the instructions in the project file, executing code blocks step by step to experience using **pyaxengine** with the Yolo11n model for object detection.

JupyterLab interface showing the "YOLO11 axmodel Inference Example" notebook. The notebook title is "YOLO11 axmodel Inference Example". The description states: "This notebook demonstrates how to use the YOLO11 axmodel for inference, including preprocessing, model inference, post-processing (including decoding of Distribution Focal Loss (DFL)), and visualization of the results."

1. Install Required Libraries

Ensure that you have the following Python libraries installed. If not, you can uncomment and run the following code block.

```
[1]: !pip install numpy opencv-python matplotlib
```

Requirement already satisfied: numpy in /usr/local/lib/python3.10/dist-packages (2.2.1)
Requirement already satisfied: opencv-python in /usr/local/lib/python3.10/dist-packages (4.10.0.84)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-packages (3.10.0)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (4.55.3)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (3.2.1)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (24.2)
Requirement already satisfied: pillow>=8 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (11.1.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.4.8)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.3.1)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (0.12.1)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

2. Import Libraries and Configure Parameters

JupyterLab interface showing the "YOLO11 axmodel Inference Example" notebook. The notebook title is "YOLO11 axmodel Inference Example". The description states: "This notebook demonstrates how to use the YOLO11 axmodel for inference, including preprocessing, model inference, post-processing (including decoding of Distribution Focal Loss (DFL)), and visualization of the results."

1. Install Required Libraries

Ensure that you have the following Python libraries installed. If not, you can uncomment and run the following code block.

```
[1]: !pip install numpy opencv-python matplotlib
```

Requirement already satisfied: numpy in /usr/local/lib/python3.10/dist-packages (2.2.1)
Requirement already satisfied: opencv-python in /usr/local/lib/python3.10/dist-packages (4.10.0.84)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-packages (3.10.0)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (4.55.3)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (3.2.1)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (24.2)
Requirement already satisfied: pillow>=8 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (11.1.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.4.8)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.3.1)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (0.12.1)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

2. Import Libraries and Configure Parameters

