

Jetson Orin Nano Setup

CS 4391 Introduction Computer Vision

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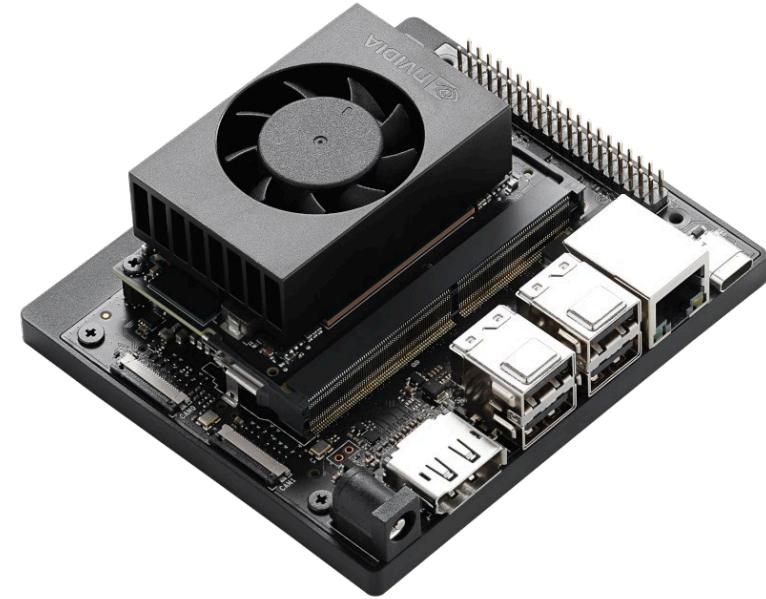
The University of Texas at Dallas

Introduction

- Introduction of the Jetson Orin Nano from NVIDIA:
<https://developer.nvidia.com/embedded/learn/get-started-jetson-orin-nano-devkit#intro>
- Initial Setup Guide for Jetson Orin Nano Developer Kit
<https://www.jetson-ai-lab.com/tutorials/initial-setup-jetson-orin-nano/>

Unboxing

Part	Quantity
NVIDIA Jetson Orin Nano Super Developer Kit	1
Keyboard and mouse	1
SD Card Reader	1
DisplayPort to HDMI Adapter	1
Logitech C270 HD Webcam	1
SanDisk 128GB Extreme microSDXC	1
Raspberry Pi Screen, 10.1 Inch Touchscreen	1
8MP IMX219 Camera	-
Instructions Sheet	2



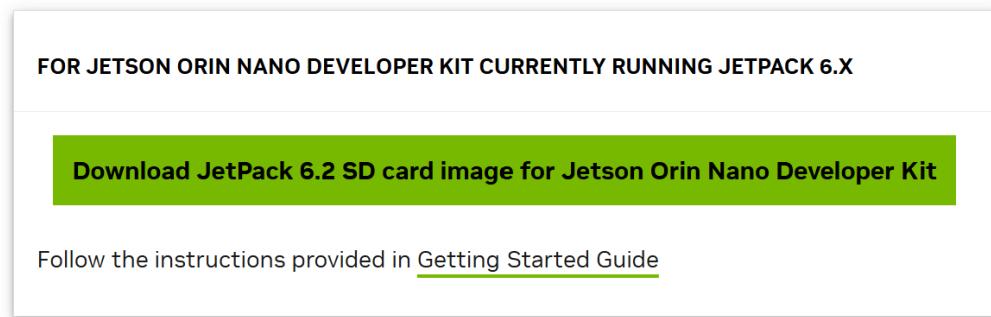
Display <https://www.amazon.com/dp/B0B9M5SCG4?th=1>

Step 1: Download JetPack 6.2 image

- <https://developer.nvidia.com/embedded/jetpack-sdk-62>
- JetPack 6.2 is the latest production release of JetPack 6. This release includes Jetson Linux 36.4.3, featuring the Linux Kernel 5.15 and an Ubuntu 22.04-based root file system. The Jetson AI stack packaged with JetPack 6.2 includes CUDA 12.6, TensorRT 10.3, cuDNN 9.3, VPI 3.2, DLA 3.1, and DFLW 24.0.

Installing JetPack

SD Card Image Method for Jetson Orin Nano Developer Kit



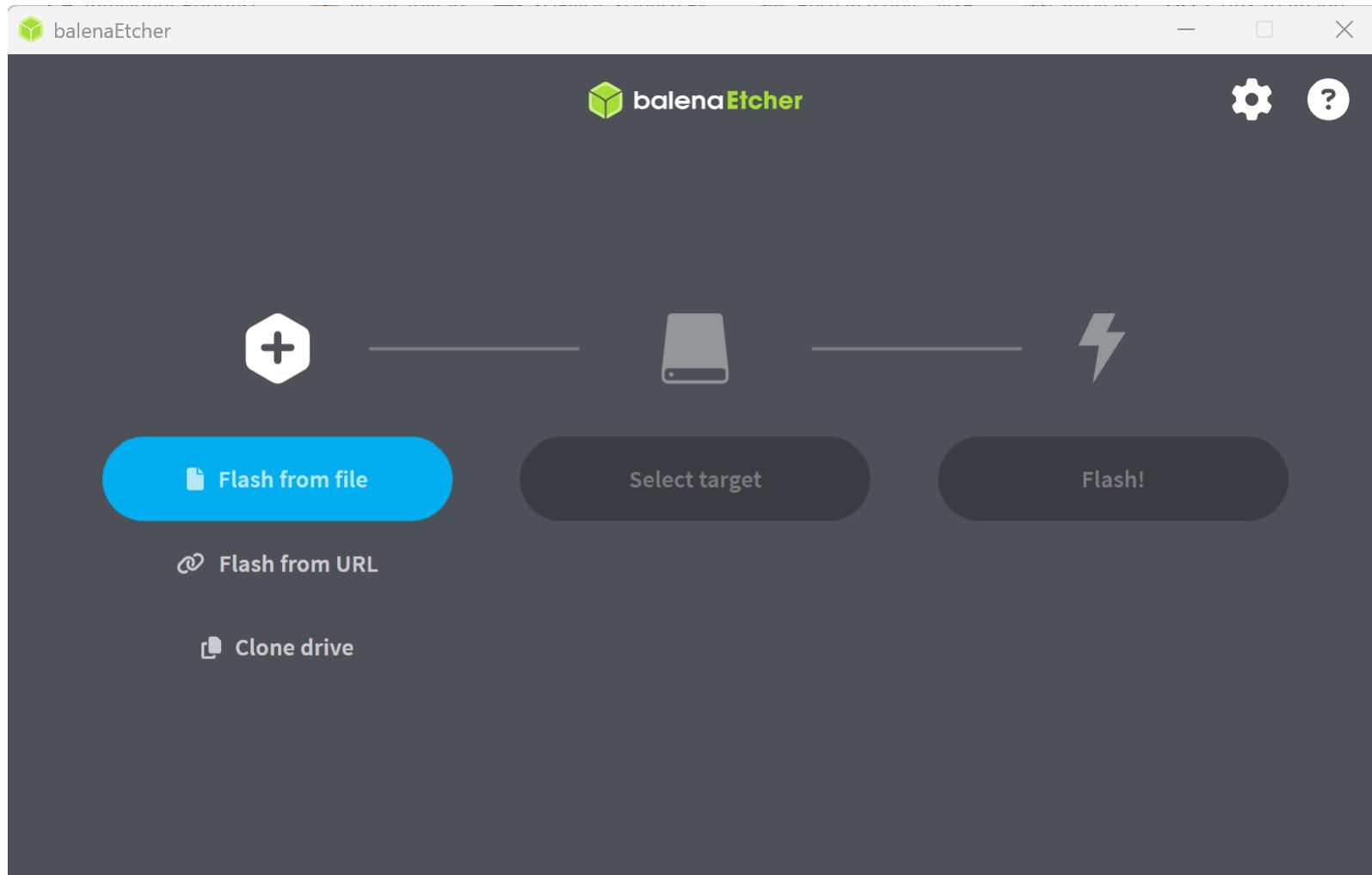
Do not unzip the file

Step 2: Download Balena Etcher

- <https://etcher.balena.io/>



Step 3: Flash the SD Card

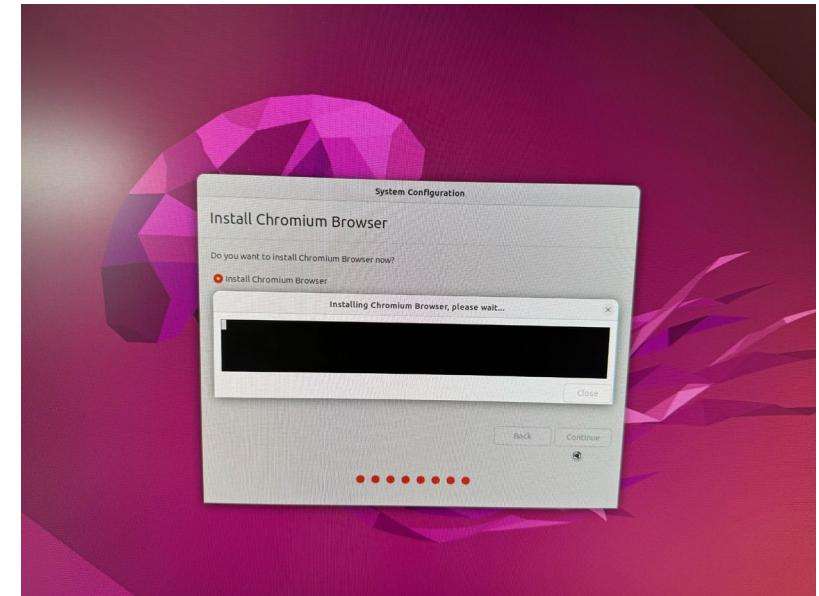


Step 4: Insert the flashed microSD card

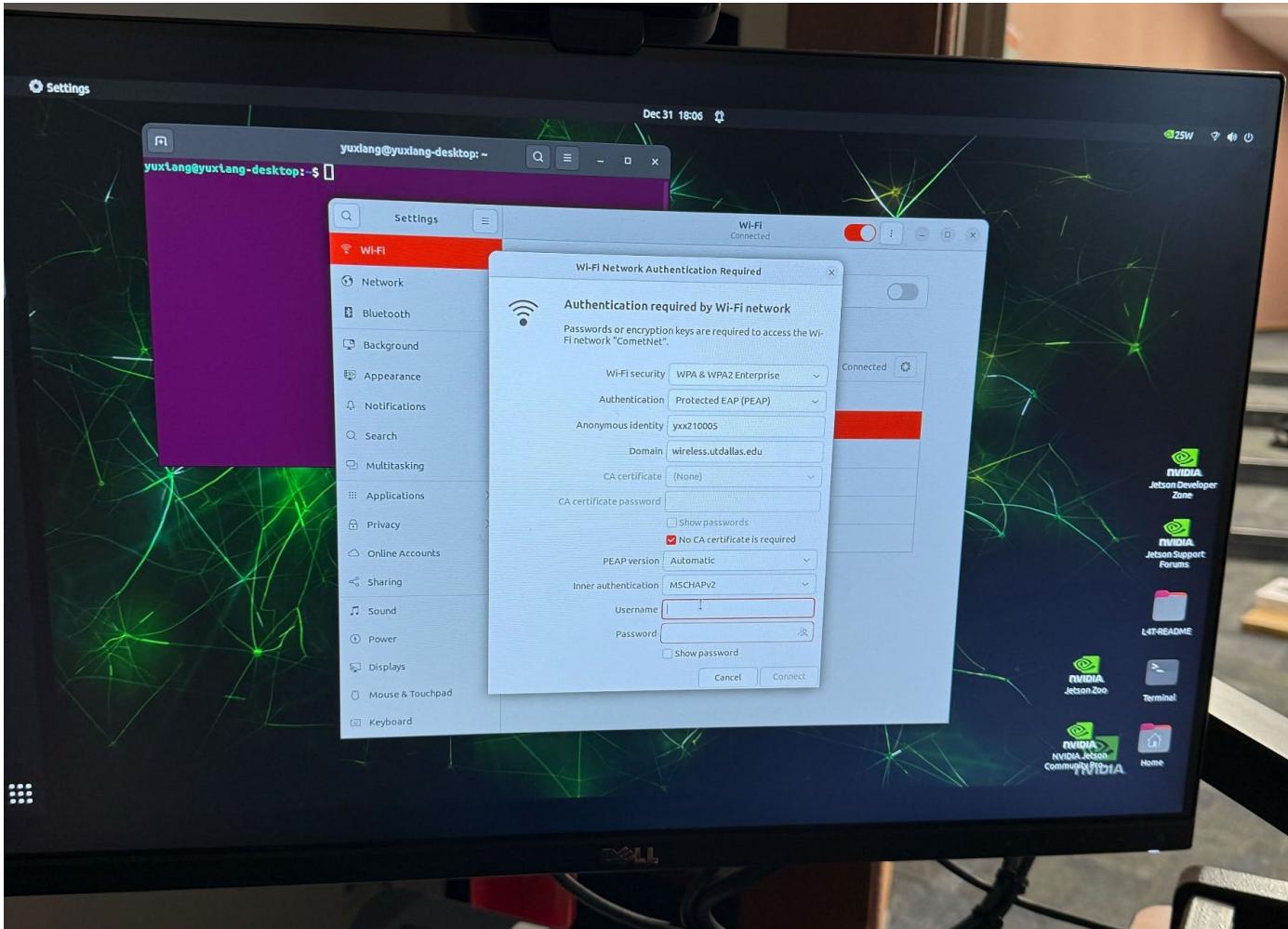


Step 5: Software setup

- Connect the keyboard, mouse, monitor
- **Power-on** by plugging the DC power supply
- **Complete the initial software setup**
 - Make sure Wi-Fi is connected. Use **UTDGuest**
 - Install the Chromium browser



Connecting to UTD WiFi



Step 5: Software setup

- Open a terminal: `ctrl + alt + t`
- `sudo apt update`
- `sudo apt upgrade`
- `sudo reboot`

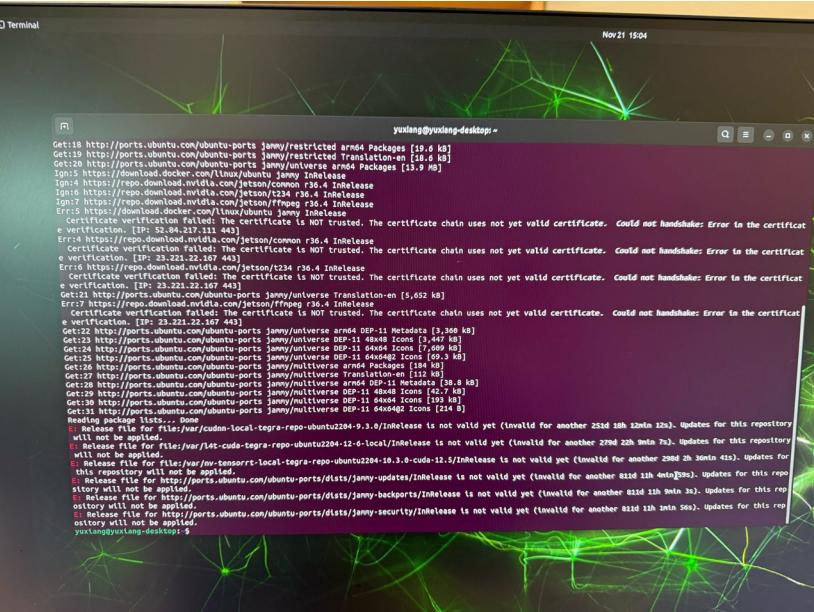
Dealing with Errors

- Make sure wifi is connected
 - date
 - sudo timedatectl set-time "2026-02-10 10:30:00"
 - Replies → network
 - 100% loss → Wi-Fi

bash

```
ping -c 3 8.8.8.8
```

- Replies → network path OK
 - 100% loss → Wi-Fi is not actually usable



```
this repository will not be applied.
E: Release file for http://ports.ubuntu.com/ubuntu-ports/dists/jammy-updates/InRelease is not valid yet
sitory will not be applied.
E: Release file for http://ports.ubuntu.com/ubuntu-ports/dists/jammy-backports/InRelease is not valid yet
pository will not be applied.
E: Release file for http://ports.ubuntu.com/ubuntu-ports/dists/jammy-security/InRelease is not valid yet
pository will not be applied.
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:06:54 PM CST 2023
yuxiang@yuxiang-desktop:~$ sudo timedatectl set-ntp true
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:42 PM CST 2023
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:44 PM CST 2023
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:46 PM CST 2023
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:47 PM CST 2023
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:48 PM CST 2023
yuxiang@yuxiang-desktop:~$ date
Tue Nov 21 03:07:49 PM CST 2023
yuxiang@yuxiang-desktop:~$ sudo timedatectl settime "2026-02-10 10:30:00"
Unknown command verb 'settime'.
yuxiang@yuxiang-desktop:~$ sudo timedatectl set-time "2026-02-10 10:30:00"
Failed to set time: Automatic time synchronization is enabled
yuxiang@yuxiang-desktop:~$ sudo timedatectl set-ntp false
yuxiang@yuxiang-desktop:~$ sudo timedatectl set-time "2026-02-10 10:30:00"
yuxiang@yuxiang-desktop:~$ date
Tue Feb 10 10:30:02 AM CST 2026
yuxiang@yuxiang-desktop:~$ sudo apt update
```

```
Feb 10 10:32
ubuntu-advantage-tools:~$ sudo apt update
[sudo] password for yuxiang: 
Fetched 13 kB in 0s (13 kB/s)
Reading package lists... Done
All upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
243 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,328 kB of additional disk space.
After this operation, 132 kB of additional disk space will be used.
Do you want to continue [Y/n]?
Get:1 https://download.nvidia.com/jetson/r36/arm64 jammy-updates/main arm64 libnvidia-cuda-147-graphics-demos arm64 armeabi-v7a 36.4.7-20250918154033 [25.9 kB]
Get:2 https://ports.ubuntu.com/ubuntu-ports jammy-updates/main libnvidia-cuda-147-graphics-demos arm64 armeabi-v7a 36.4.7-20250918154033 [25.9 kB]
Get:3 https://ports.ubuntu.com/ubuntu-ports jammy/stable arm64 contained by arm64 2.2.1-1+jammy [1.11 kB]
Get:4 https://ports.ubuntu.com/ubuntu-ports jammy-updates/main libnvidia-cuda-147-graphics-dev arm64 armeabi-v7a 36.4.7-20250918154033 [20.1 kB]
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Get:6 https://ports.ubuntu.com/ubuntu-ports jammy-updates/main libnvidia-cuda-147-graphics-dev arm64 armeabi-v7a 36.4.7-20250918154033 [1.391 kB]
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Get:8 https://ports.ubuntu.com/ubuntu-ports jammy-updates/main arm64 libnvidia-tlc1c arm64 5.15-0.176-100 [1.391 kB]
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Get:21 https://repo.download.nvidia.com/Jetson/r36/arm64/multiverse nvidia-147-weston arm64 armeabi-v7a 36.4.7-20250918154033 [1.628 kB]
Get:22 https://repo.download.nvidia.com/Jetson/r36/arm64/multiverse nvidia-147-weston arm64 armeabi-v7a 36.4.7-20250918154033 [1.628 kB]
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Get:24 https://repo.download.nvidia.com/Jetson/r36/arm64/multiverse nvidia-147-weston arm64 armeabi-v7a 36.4.7-20250918154033 [1.628 kB]
Get:25 https://repo.download.nvidia.com/Jetson/r36/arm64/multiverse nvidia-147-weston arm64 armeabi-v7a 36.4.7-20250918154033 [1.628 kB]
Get:26 https://ports.ubuntu.com/ubuntu-port jammy-updates/main arm64 libpam-systemd arm64 249.11-Ubuntu17 [133 kB]
Get:27 http://ports.ubuntu.com/ubuntu-port jammy-updates/main arm64 libpam-systemd arm64 249.11-Ubuntu17 [133 kB]
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```

Step 6: Set up the USB camera

- Open a terminal: `ctrl + alt + t`
- `sudo apt install -y python3-pip`
- `pip install opencv-python`
- `git clone https://github.com/yuxng/cs4391_spring26.git`
- `python test_usb_camera.py`



Questions?