

## Assembly Guide for SparkFun JetBot using Jetson Orin Nano Developer Kit:

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This manual is modification for the manual provided by Sparkfun for Jetson Nano ([Link](#)). The following table-1 and figure-1 show the components used to build the Jetson Orin Nano Jetbot:

Item	Name
1	NVIDIA Jetson Orin ORIN NANO Developer Kit
2	Lexar NM620 M.2 2280 PCIe Gen3x4 NVMe SSD
3	Charmcast PowerBank 10400mAh – model: W1052
4	ROB-17279 - JetBot Chassis Kit V2 (figure-2)
5	DEV-15945 Sparkfun QWIIC PHAT V2.0
6	ROB-15451 Sparkfun QWIIC Motor Driver
7	LCD-22495 Sparkfun Micro OLED Breakout (QWIIC)
8	IMX219-200 8MP Camera with 200° FOV
9	5449; Adafruit USB Type C 3.1 PD to 5.5mm Barrel Jack Cable - 9V 5A Output - 1.2m long



Figure 1: Jetson Orin Nano Jetbot Parts

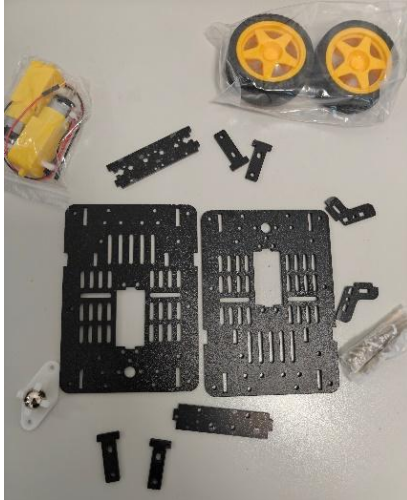


Figure 2: Jetbot Chassis Parts

To assemble the chassis, we will follow the steps from [Assembly Guide for SparkFun JetBot AI Kit V2.0](#), which go through the following steps:

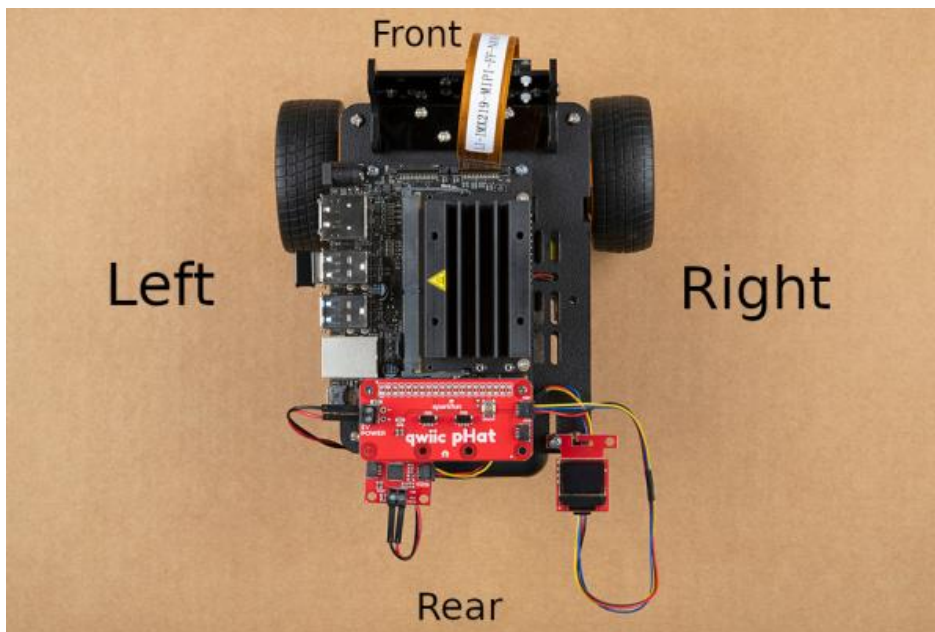


Figure 3: Orientation reference

- Step 1: Attach the motors and ball caster, follow the following images steps:

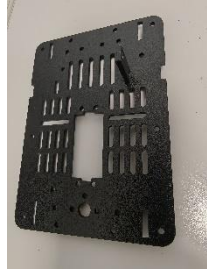


Figure 4: Step 1.1

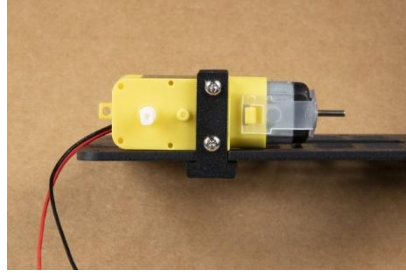


Figure 5: Step1.2

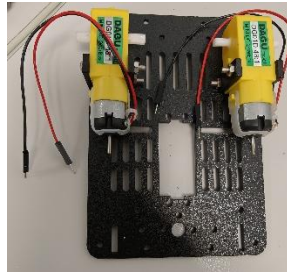


Figure 6: Step 1.3

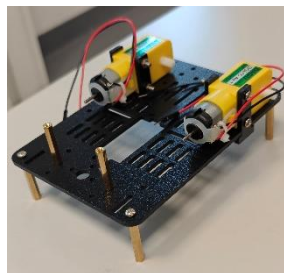


Figure 7: Step 1.4

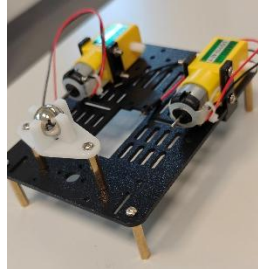


Figure 8: Step 1.5

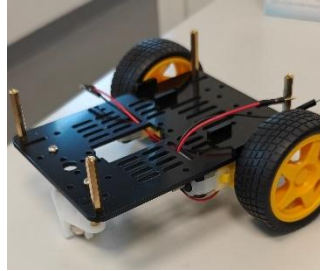


Figure 9: Step 1.6

- Step 2: Camera assembly and Installation:

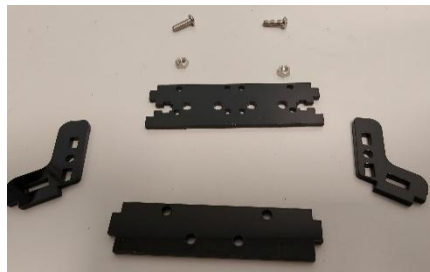


Figure 10: Step 2.1



Figure 11: Step 2.2



Figure 12: Step 2.3



Figure 13: Step 2.4

- Step 3: Fix battery holder in the bottom of the Jetbot (Better to use Dual lock) and (fix battery holder using cable tie and put in consideration the powerbank):

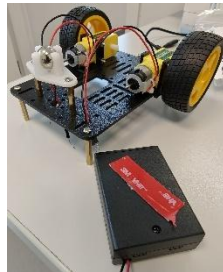


Figure 14: Step 3.1

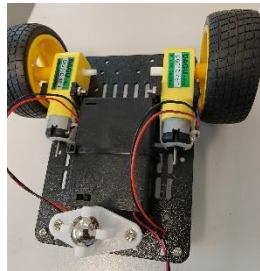


Figure 15: Step 3.2

- Step 4: Place motor driver and wire battery and motors to driver:

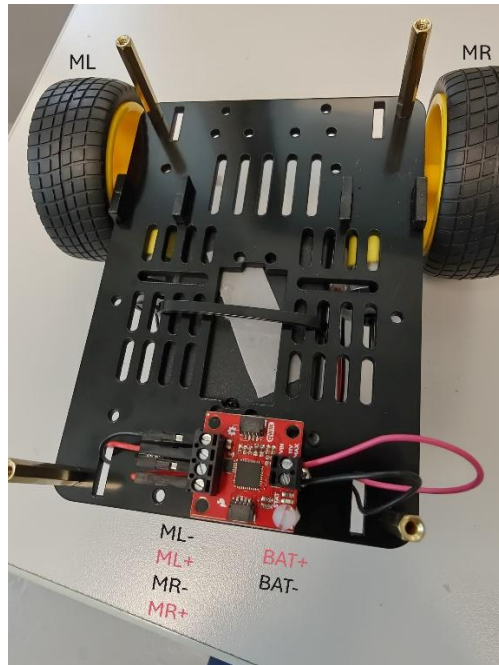


Figure 16: Step 4

- Step 5: Place PowerBank using Dual Lock and place USB PD cable

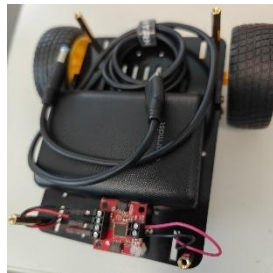


Figure 17: Step 5

- Step 6: Connect PCIe SSD to Jetson Orin Nano by removing the securing screw:



Figure 18: Step 6.1



Figure 19: Step 6.2

- Step 7: Attach the Jetson Orin Nano to the top of Jetbot and fix it by double sided tape:



Figure 20: Step 7.1

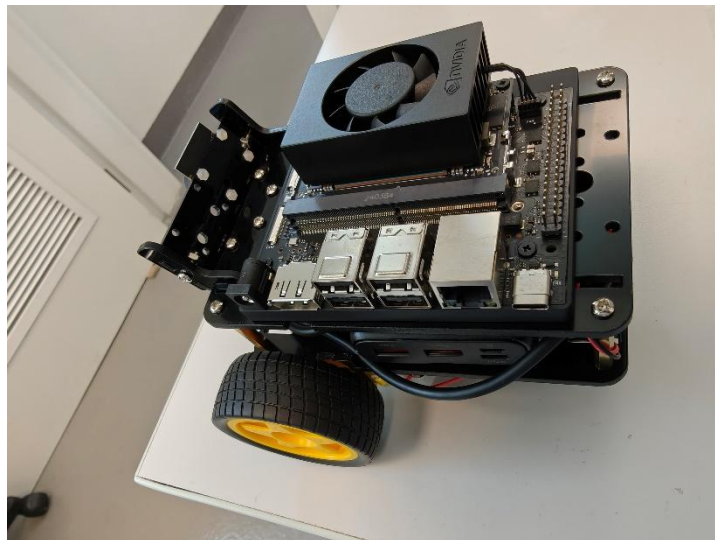


Figure 21: Step 7.2

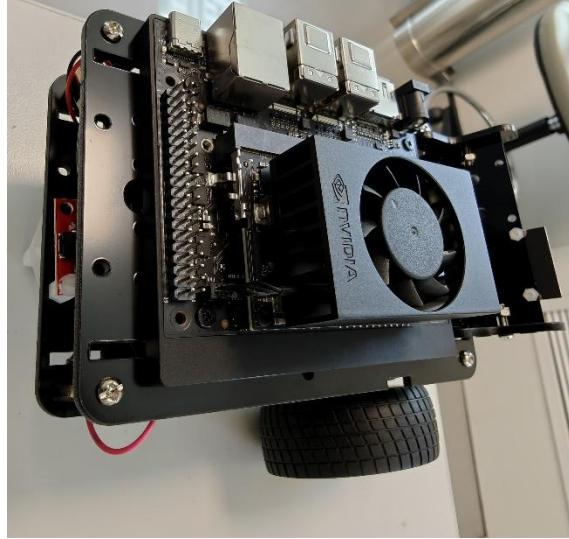


Figure 22

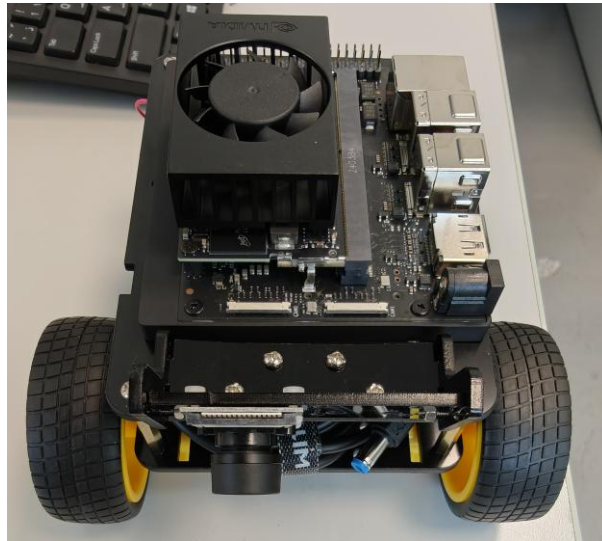


Figure 23

- Step 8: install qwiic pHat and LCD:

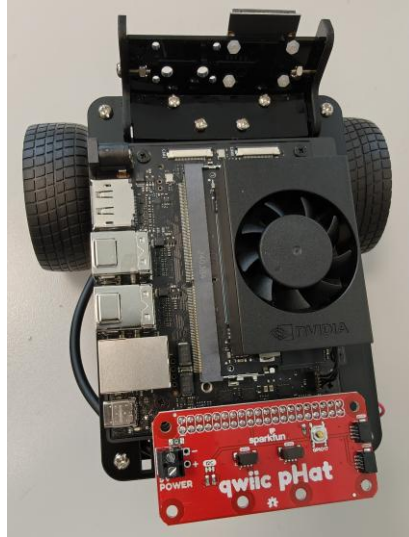


Figure 24: Step 8.1

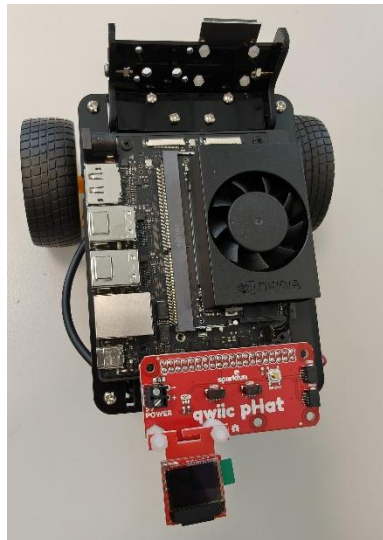


Figure 25: Step 8.2

- Step 9: Connect camera and qwiic cables:
  - Camera cable which used is Standard – Mini CSI camera cable
  - qwiic cable is connected from pHat to LCD and another cable is connected from LCD to motor driver



Figure 26

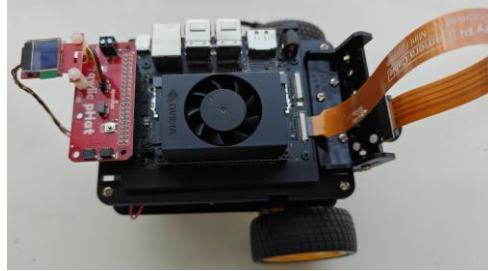


Figure 27

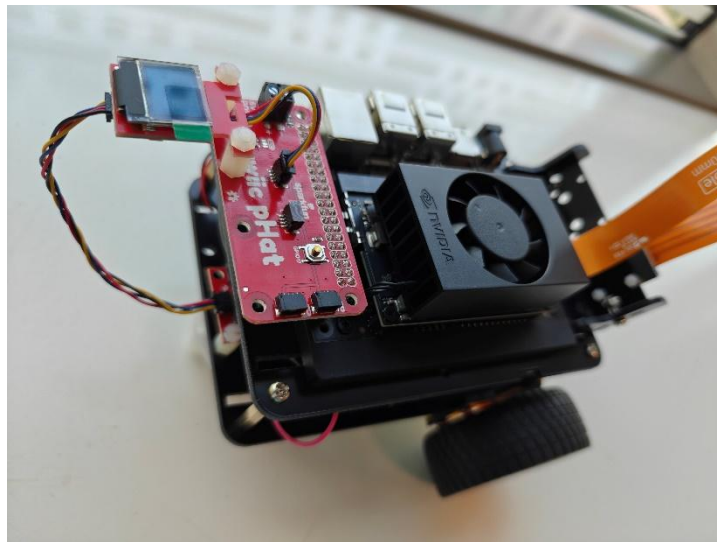


Figure 28