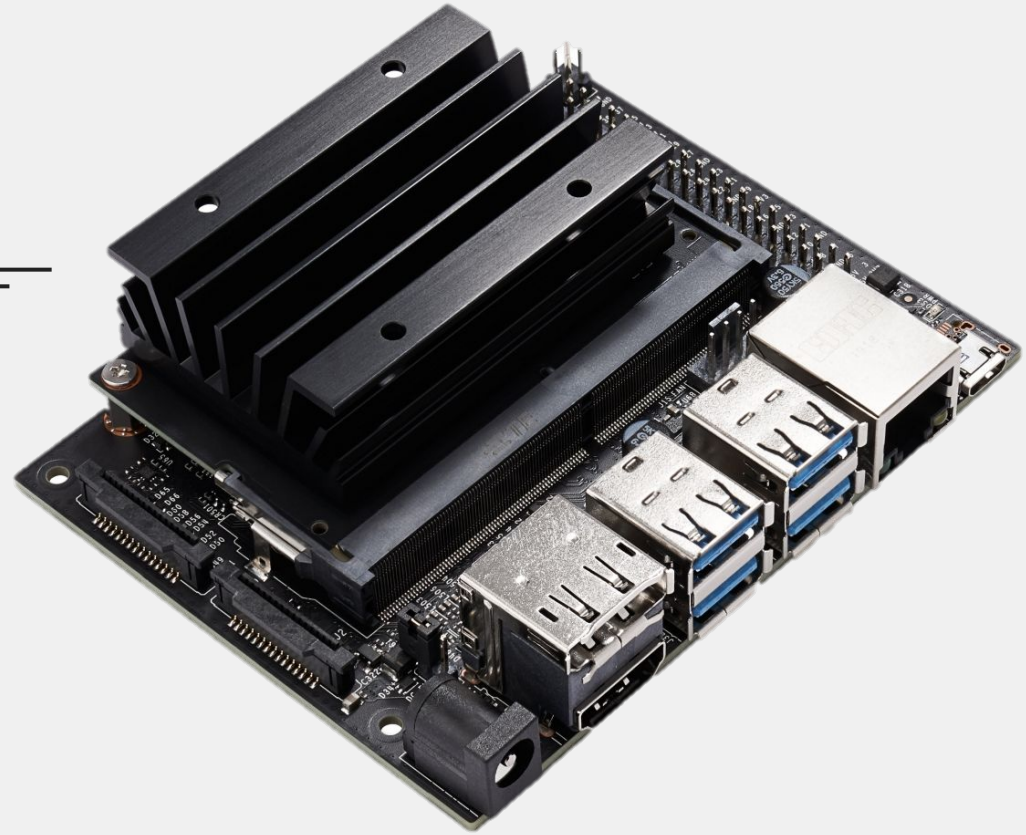
AUGMENTED STARTUPS
Computer Vision | AI | Robotics

Getting Started with NVIDIA JETSON

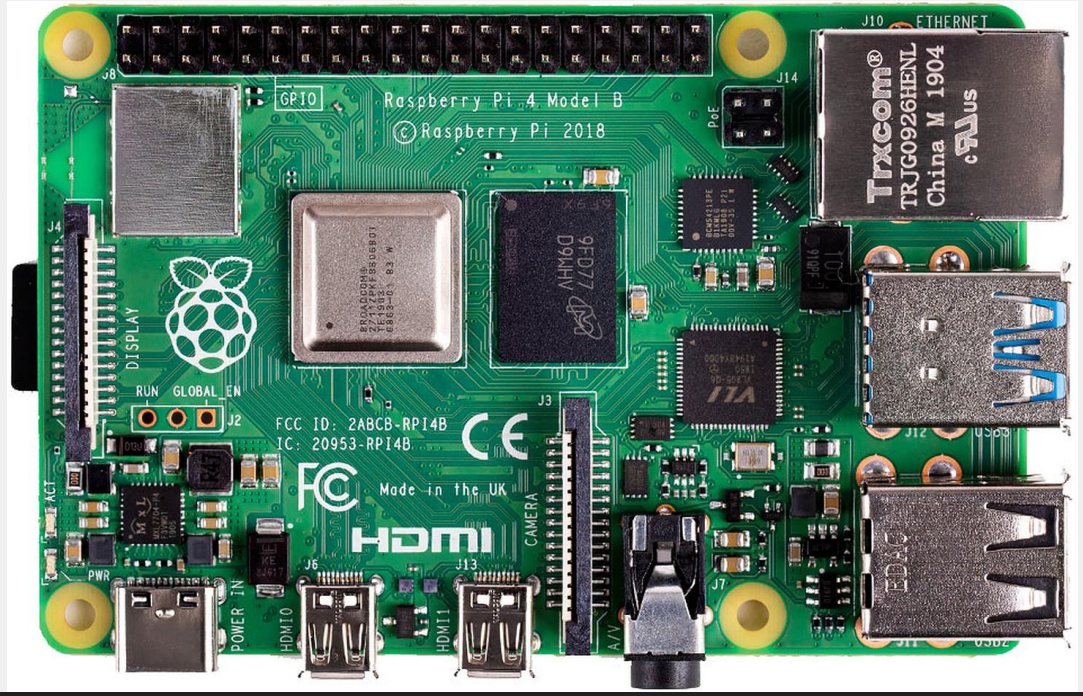
Content

- How Jetson is better than Raspberry-pi
- Comparison of different variants of Jetson
  - Which and where to buy?
- SD card flashing
  - Which and where to buy?
  - How to download image for Jetson
- Running Jetson for the first time

NVIDIA JETSON



VS



RASPBERRY PI

Jetson Vs RaspberryPi

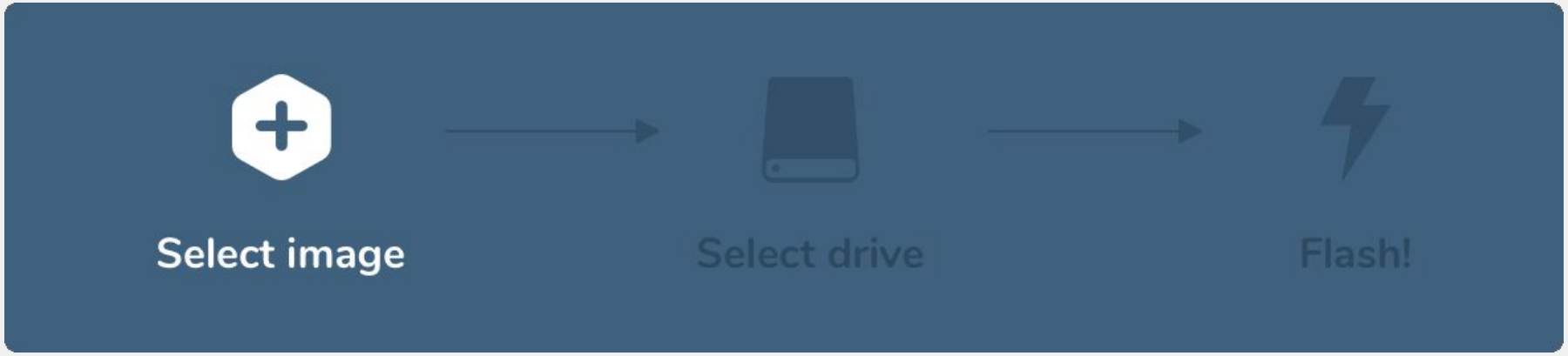
Features	Jetson Nano	RaspberryPi
Release Date	March 2019	June 2019
CPU	Quad-core ARM A57	Quad-core ARM A72
Memory	2, 4 GB 64bit LPDDR4	1, 2, 4, 8 GB 64 bit LPDDR4
GPU	128-Core Nvidia Maxwell	No
Storage	External SD Card	External SD Card
DL HW	CUDA GPU	CPU
USB Ports	4x USB Ports	4x USB Ports
Ethernet	Yes	Yes
Wireless	External Wifi Dongle	Integrated Wifi
Display	HDMI port Display Port	2x Micro HDMI port
GPIO Header	40-pin	40-pin
CSI	Yes	Yes
Power	Micro-USB (5V, 2/3 A) Barrel Jack (5V, 4A)	Micro-USB (5V, 2/3 A)
Price Range	60~100$	40~110$

Jetson Nano Vs TX2 Vs Xavier

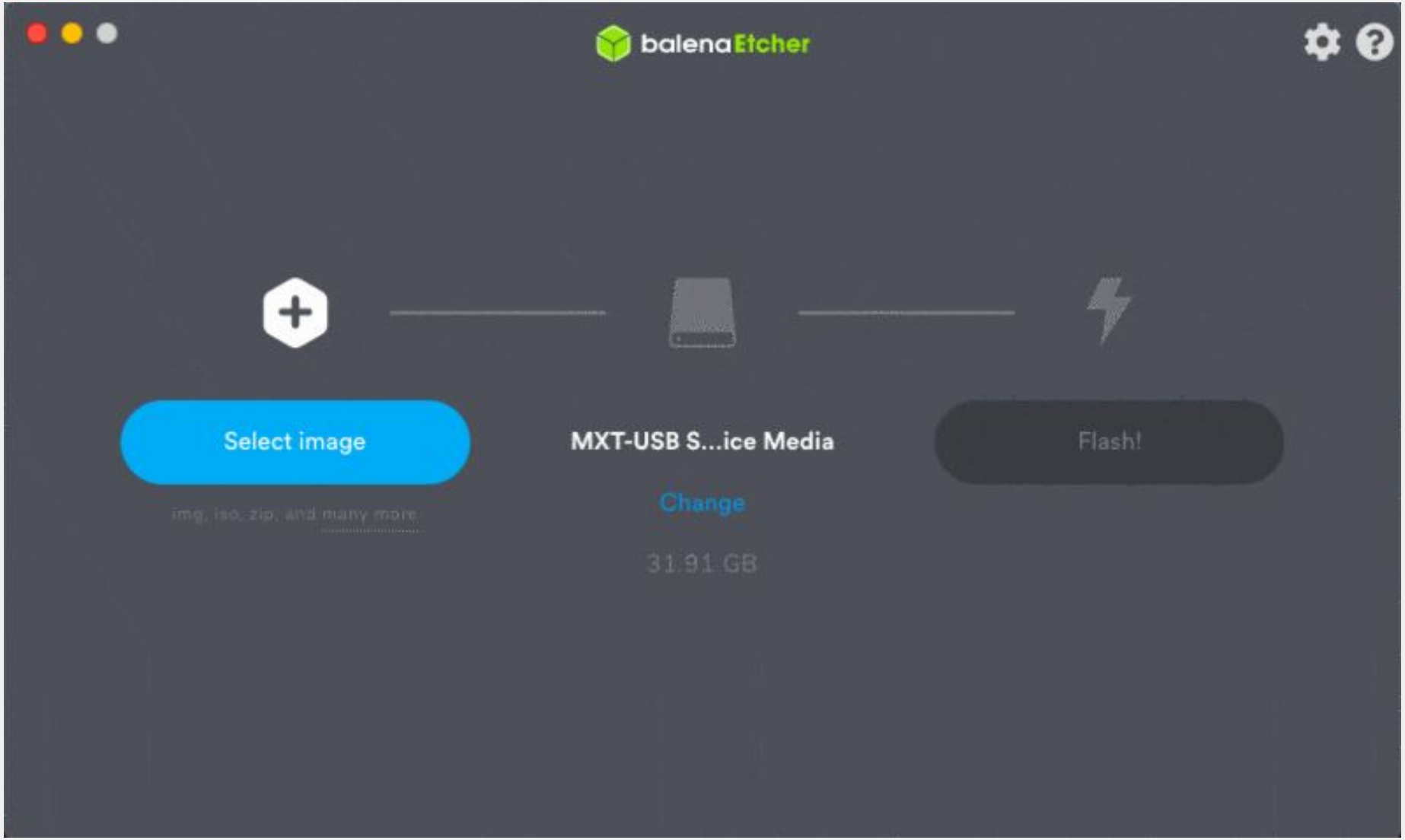
Features	Jetson Nano	Jetson TX2	Jetson Xavier NX	Jetson AGX Xavier
CPU	4-core ARM A57	6-core Denver A57 2x 2MB L2 Cache	6-core Carmel ARM 3x 2MB L2 Cache, 4 MB L3	8-core Carmel ARM 4x 2MB L2 Cache, 4 MB L3
Memory	2, 4 GB 64-bit LPDDR4 25.6 GB/s	4 GB 128-bit LPDDR4 51 GB/s 8 GB 128-bit LPDDR4 58 GB/s	8 GB 128-bit LPDDR4x 58 GB/s	16 GB 256-bit LPDDR4x 137 GB/s 32 GB 256-bit LPDDR4x 137 GB/s
GPU	128-Core Nvidia Maxwell 0.5 TFLOPS (FP16)	256-Core Nvidia Pascal 1.3 TFLOPS (FP16)	384-Core Nvidia Volta 21 TOPS (INT8)	512-Core Volta + NVDLA 10 TFLOPS (FP16) 32 TOPS INT8
Storage	External SD Card 16 GB eMMC	External SD Card 16GB, 32 GB eMMC	External SD Card 8GB eMMC	External SD Card 32 GB eMMC
Codec	4K @ 60FPS Decode 4K @ 30FPS Encode	2x 4K @ 60FPS Decode 4K @ 60FPS Encode	2x 4K @ 60FPS Decode 2x 4K @ 30FPS Encode	4x 4K @ 60FPS Decode 6x 4K @ 30FPS Encode
CSI	CSI-2 (18 Gbps)	CSI-2 (30~40 Gbps)	CSI-2 (30 Gbps)	CSI-2 (40~60 Gbps)
Power	Micro-USB (5V, 2/3 A) (10~15W) Barrel Jack (5V, 4A) (10~20W)	Micro-usb Type-C 10~25W Barrel Jack 10~30W	Micro-usb Type-C 10~25W Barrel Jack 10~30W	Micro-usb Type-C 10~25W Barrel Jack 10~30W
Price Range	60~100$	400~500$	400~500$	900~1000$

SD Card Flashing

- Download the Jetson Nano Image
  - https://developer.nvidia.com/jetson-nano-sd-card-image
- Download and install BalenaEtcher for SD card Flashing
  - https://www.balena.io/etcher/
- Minimum 16GB SD Card (32GB recommended)

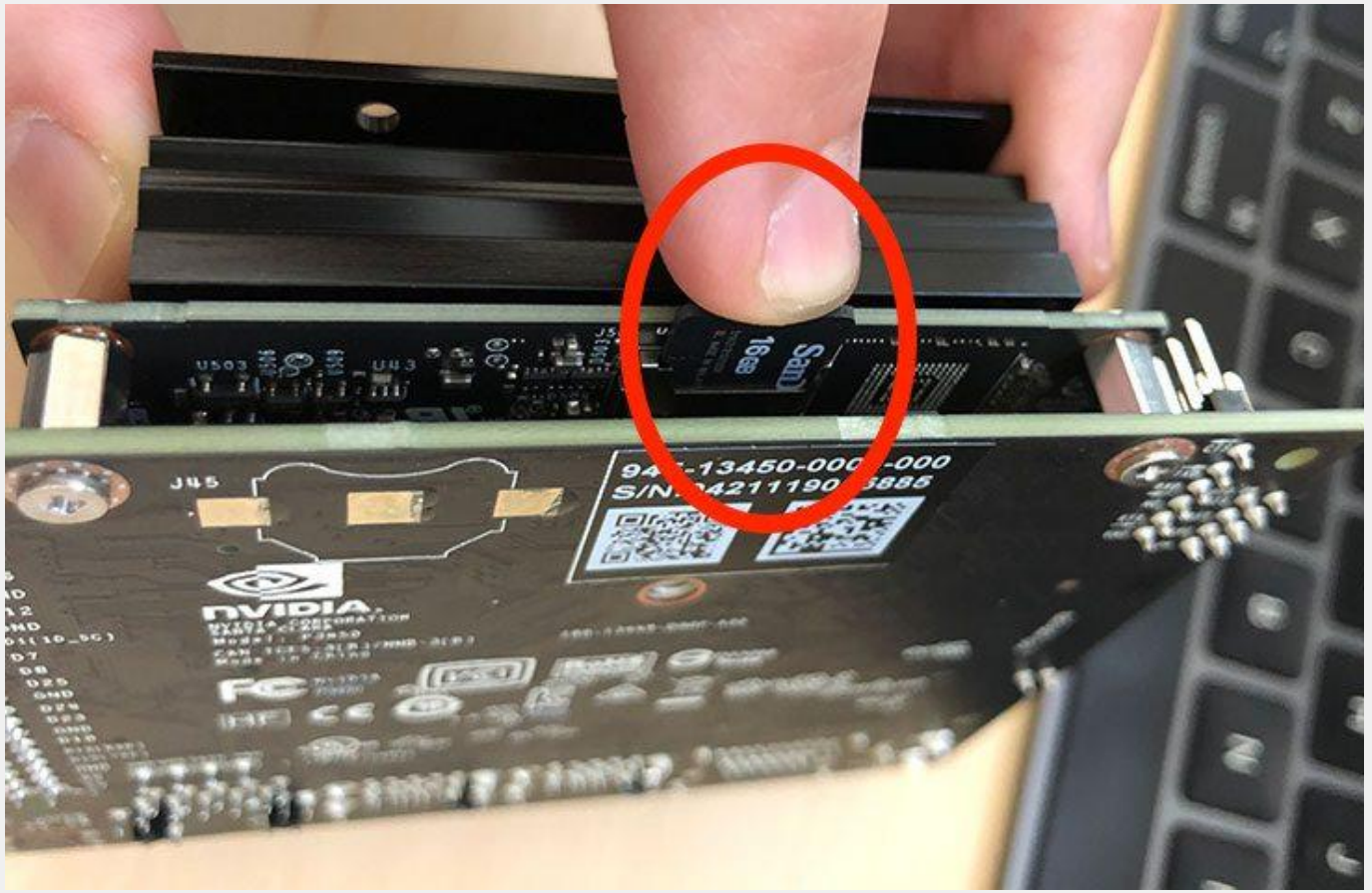


SD Card Flashing



Starting Jetson

- Inject SD card in to the Jetson
- Power on Jetson using any power source (Micro-USB or Barrel Jack)



Links to Buy Items

- Jetson Nano
  - https://amzn.to/2Z4sGG4
- SD Card (High Speed Class-10)
  - https://amzn.to/2Ktf8nT
- Power Supply
  - https://amzn.to/3pat4GB
- Jetson Case with Fan
  - https://amzn.to/2H4ar1R
- Wifi module
  - https://amzn.to/2H26b2R

Thank You