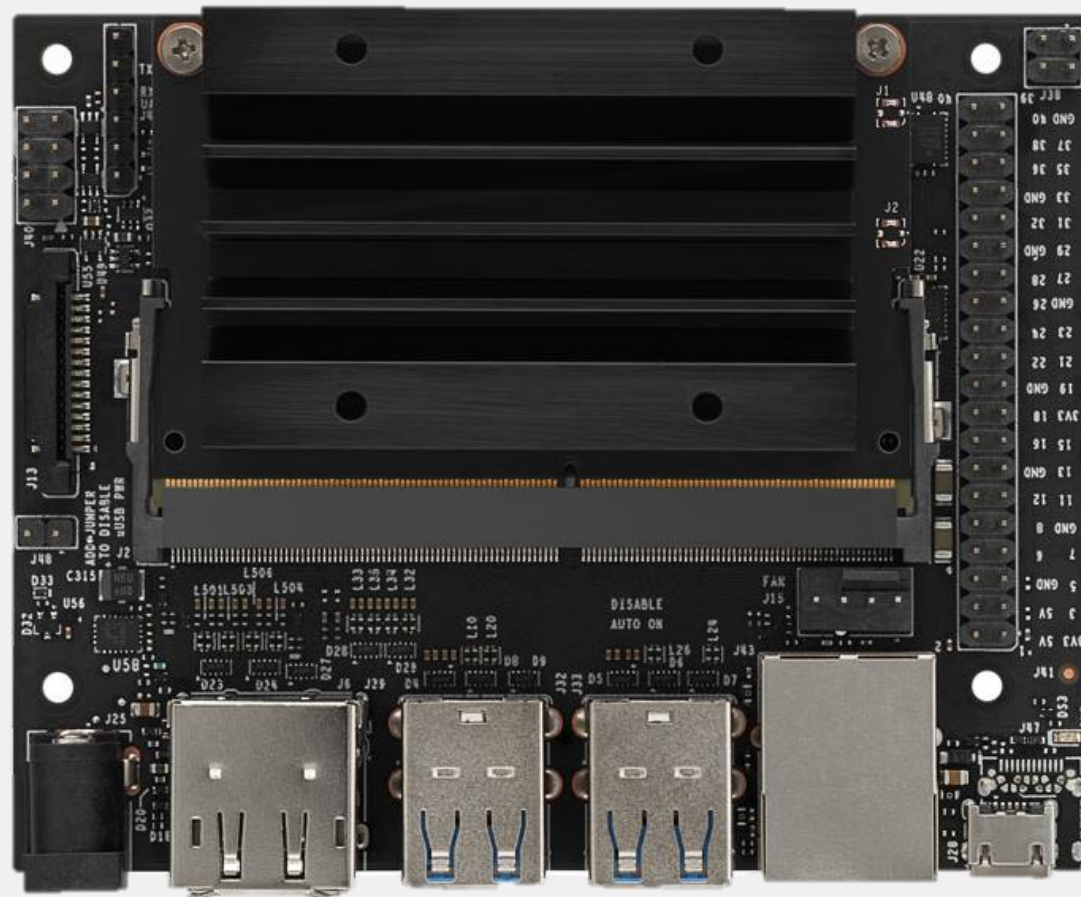


Introduction to **NVIDIA JETSON**



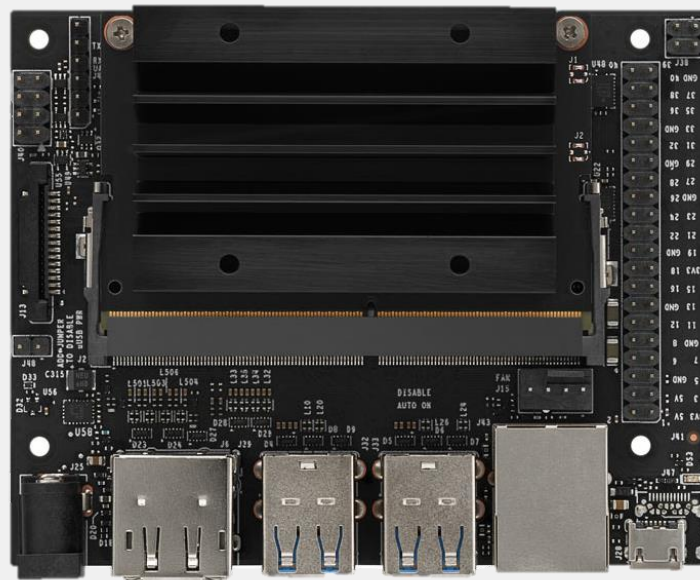
What is Jetson?

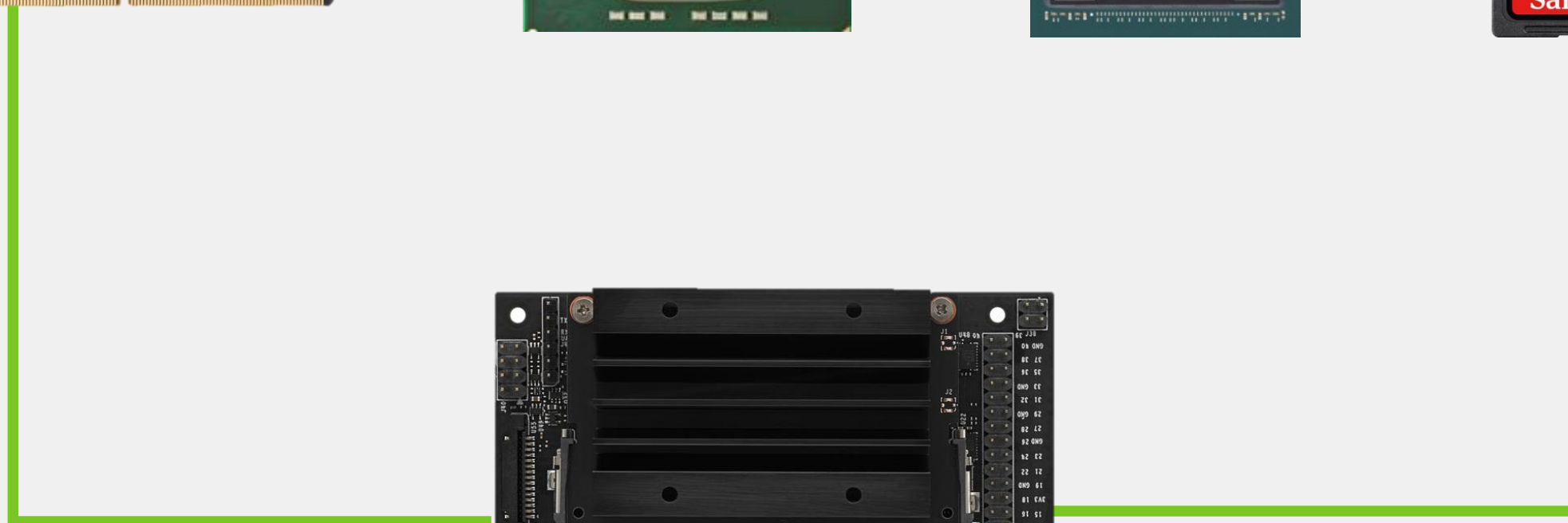
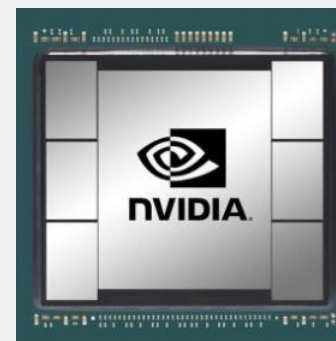


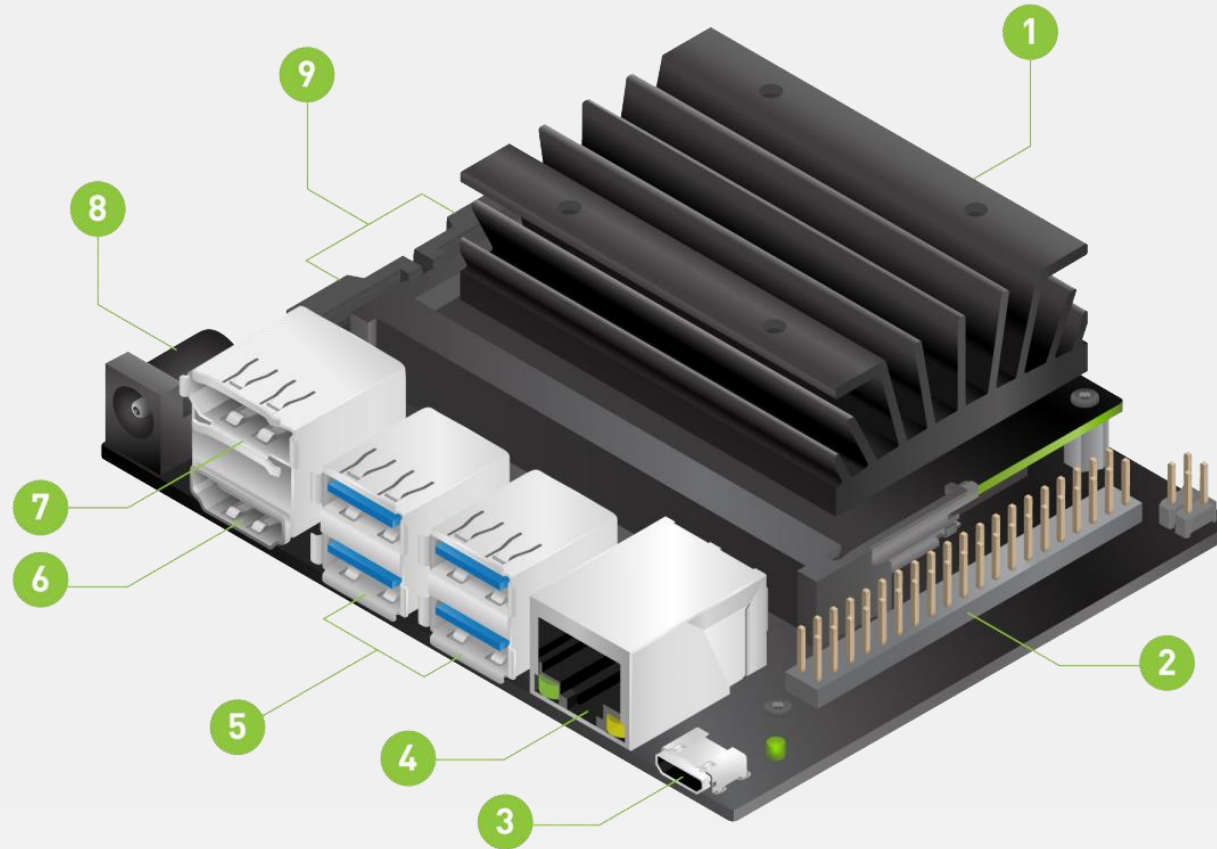
**Developer Kit By
NVIDIA**

**Low Power
Embedded Module**

**Designed for AI
Applications**







- ① microSD card slot for main storage
- ② 40-pin expansion header
- ③ Micro-USB port for 5V power input, or for Device Mode
- ④ Gigabit Ethernet port
- ⑤ USB 3.0 ports (x4)
- ⑥ HDMI output port
- ⑦ DisplayPort connector
- ⑧ DC Barrel jack for 5V power input
- ⑨ MIPI CSI-2 camera connectors

Overview

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- Setting up AI Jetson
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- Object Detection on custom dataset
- Model optimization using TensorRT
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- Human Pose estimation
- Face Recognition and Attendance system

Starter

PRO

PRO + Apps

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- Why Jetson?
- Comparison with RPI
- SD Card Flashing

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Installation of required libraries:

- **OpenCV,**
- **PyTorch,**
- **TorchVision etc.**

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- **Basics of Computer Vision**
- **OpenCV and PyTorch**

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- What is Object Detection?
- YOLO Object Detection

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- Dataset Annotation
- How to train a model?
- Object detection using custom model

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- **Use of TensorRT and its benefits**
- **TensorRT installation**
- **YOLO model to TensorRT**

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➤ Introduction to DeepStream

- DeepStream multiple camera synchronization
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- About DeepStream
- How to setup DeepStream SDK on Jetson?

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➤ **DeepStream multiple camera synchronization**

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- **Setting up multiple camera for DeepStream**

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➤ Real-life challenges

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- Machine Security
- Different AI applications on Jetson

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- **Data Annotation on Roboflow**
- **Training on custom dataset of ANPR**

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➤ Human Pose estimation

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- Installing PoseNet library
- Perform pose estimation on Jetson

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- **Face Recognition and Attendance system**

- **How face recognition works?**
- **Face recognition for attendance system**

Thank You