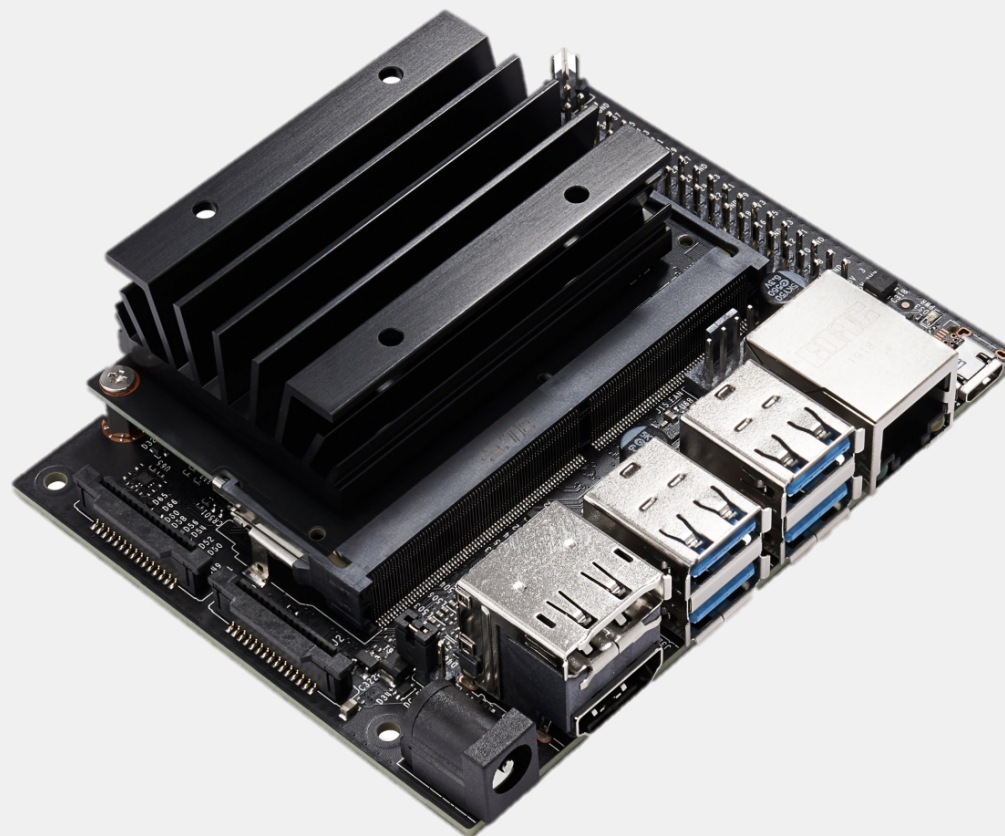
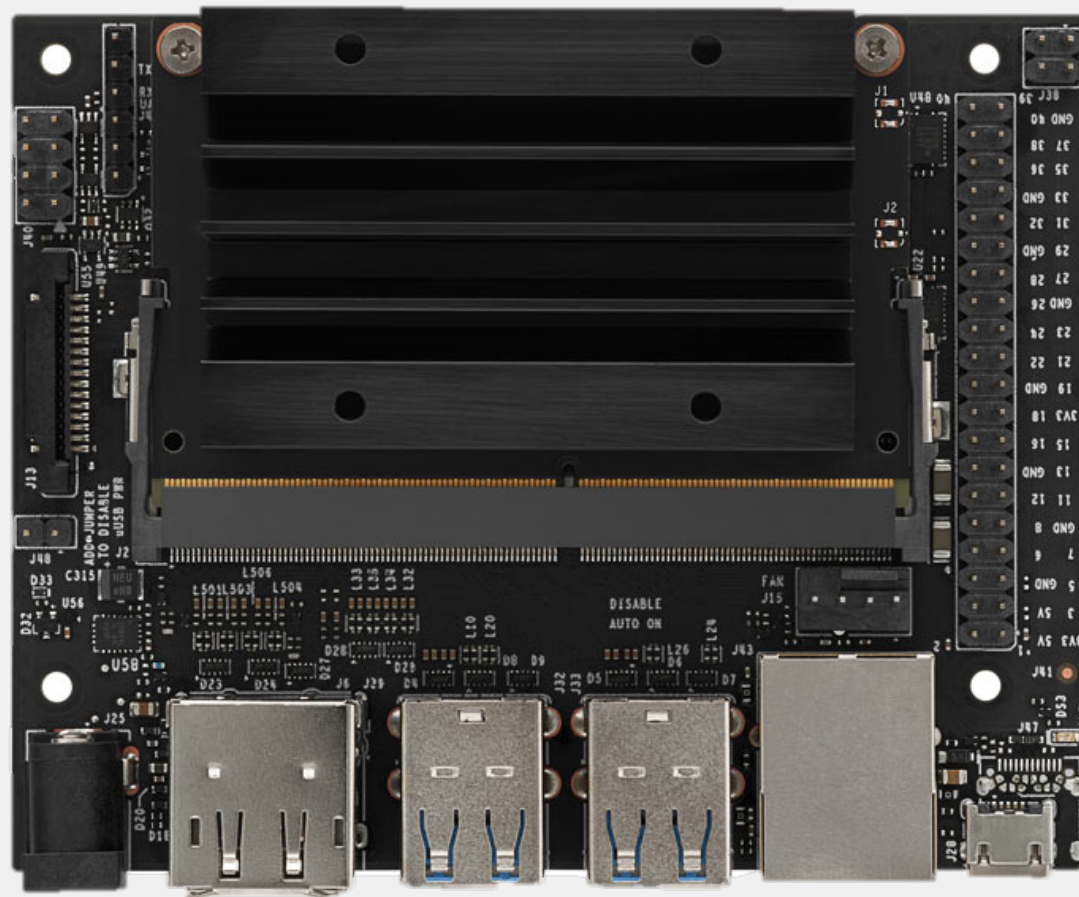


Introduction to **NVIDIA JETSON**



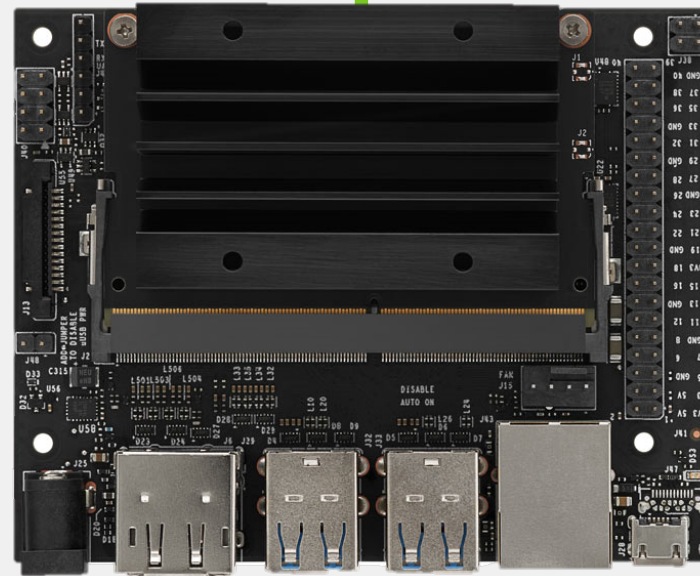
What is Jetson?

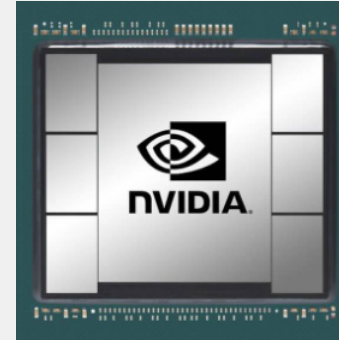


**Low Power
Embedded
Module**

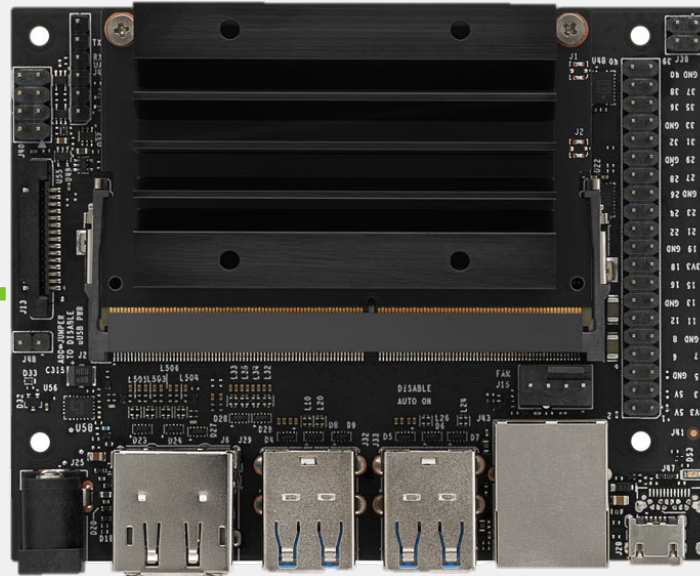
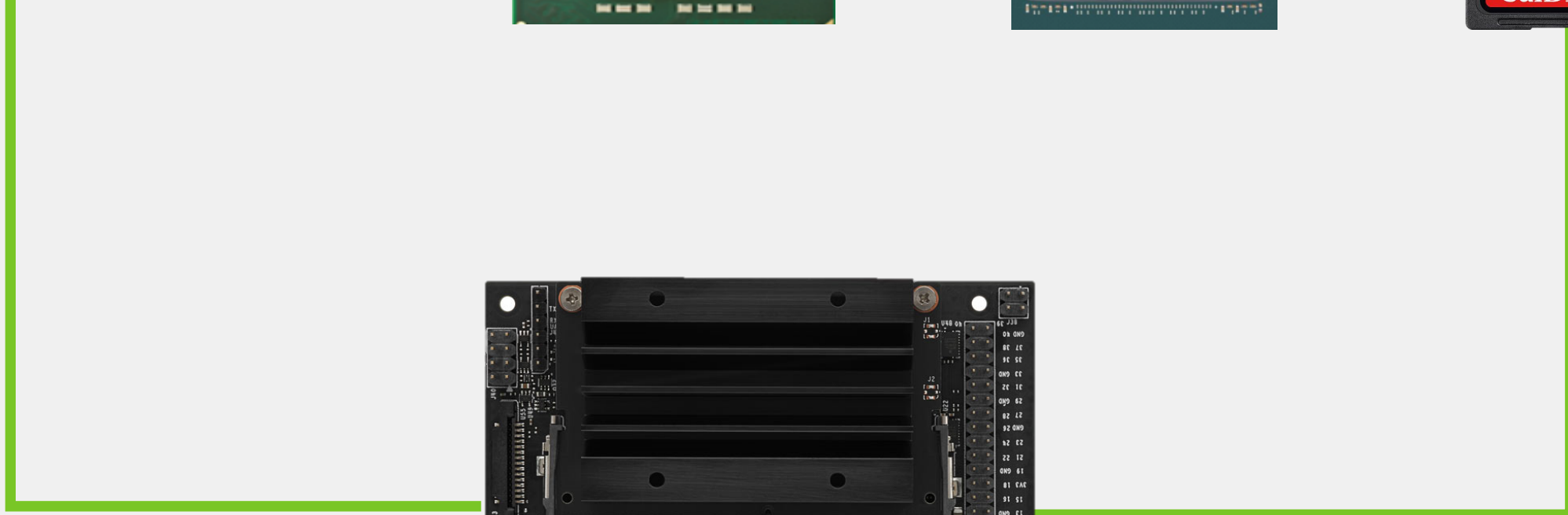
**Developer Kit By
NVIDIA**

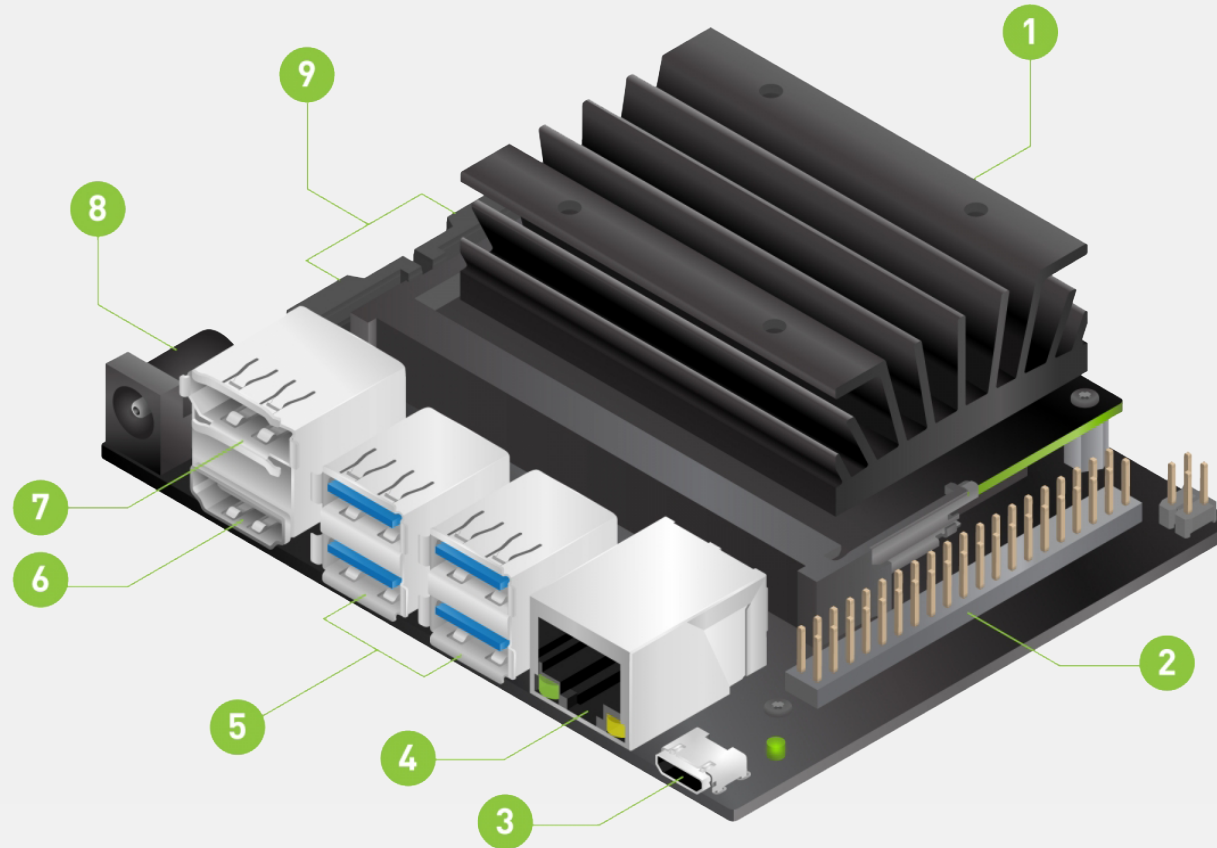
**Designed for AI
Applications**





==





- 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

Starter

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset

PRO

- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges

PRO + Apps

- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

Overview

- **Starting with Jetson**

- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

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

Overview

- Starting with Jetson
- **Setting up AI Jetson**
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

Installation of required libraries:

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

Overview

- Starting with Jetson
- Setting up AI Jetson
- **Basics of Computer Vision**
 - Object Detection and Its Application
 - Object Detection on custom dataset
 - Model optimization using TensorRT
 - Introduction to DeepStream
 - DeepStream multiple camera synchronization
 - Real-life challenges
 - Number plate recognition on Jetson
 - Human Pose estimation
 - Face Recognition and Attendance system

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

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision

- **Object Detection and Its Application**

- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

- **What is Object Detection?**
- **YOLO Object Detection**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application

• Object Detection on custom dataset

- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

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

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- **Model optimization using TensorRT**
- **Introduction to DeepStream**
- **DeepStream multiple camera synchronization**
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- Face Recognition and Attendance system

PRO

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- **Model optimization using TensorRT**
 - Introduction to DeepStream
 - DeepStream multiple camera synchronization
 - Real-life challenges
 - Number plate recognition on Jetson
 - Human Pose estimation
 - Face Recognition and Attendance system

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

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- **Introduction to DeepStream**
 - DeepStream multiple camera synchronization
 - Real-life challenges
 - Number plate recognition on Jetson
 - Human Pose estimation
 - Face Recognition and Attendance system

- **About DeepStream**
- **How to setup DeepStream SDK on Jetson?**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- **DeepStream multiple camera synchronization**
 - Real-life challenges
 - Number plate recognition on Jetson
 - Human Pose estimation
 - Face Recognition and Attendance system

- **Setting up multiple camera for DeepStream**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- **Real-life challenges**
- **Number plate recognition on Jetson**
- **Human Pose estimation**
- **Face Recognition and Attendance system**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- **Real-life challenges**
 - Number plate recognition on Jetson
 - Human Pose estimation
 - Face Recognition and Attendance system

- **Machine Security**
- **Different AI applications on Jetson**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- **Number plate recognition on Jetson**
 - Human Pose estimation
 - Face Recognition and Attendance system

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

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- **Human Pose estimation**
- Face Recognition and Attendance system

- **Installing PoseNet library**
- **Perform pose estimation on Jetson**

Overview

- Starting with Jetson
- Setting up AI Jetson
- Basics of Computer Vision
- Object Detection and Its Application
- Object Detection on custom dataset
- Model optimization using TensorRT
- Introduction to DeepStream
- DeepStream multiple camera synchronization
- Real-life challenges
- Number plate recognition on Jetson
- Human Pose estimation
- **Face Recognition and Attendance system**

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

Thank You