

The logo for the 2021 Embedded Vision Summit Virtual. It features the year '2021' in a light blue font at the top. Below it, the word 'embedded' is in a smaller, dark blue font. The word 'VISION' is in a large, bold, dark blue font, with the letter 'O' replaced by a colorful circular graphic composed of many small dots. Below 'VISION' is the word 'summit' in a dark blue font. At the bottom, the word 'VIRTUAL' is in a green font, followed by a vertical bar and the dates 'MAY 25-28' in a light blue font. The entire logo is set against a white background with a subtle grid pattern, which is itself centered within a larger graphic of overlapping green and yellow geometric shapes.

2021
embedded
VISION
summit®
VIRTUAL | MAY 25-28

Streamlining Development of Edge AI Applications

Barrie Mullins
Director of Marketing
for Jetson and Edge AI Solution

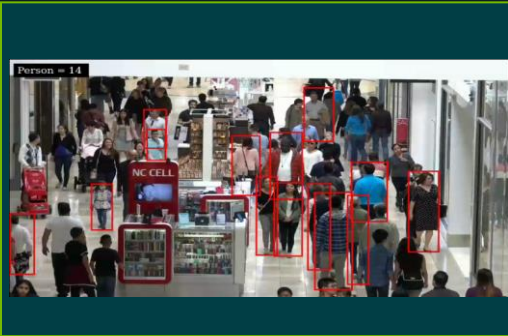


Challenges in Developing and Deploying AI products

2021
embedded
VISION
summit

Challenges in Developing and Deploying AI products

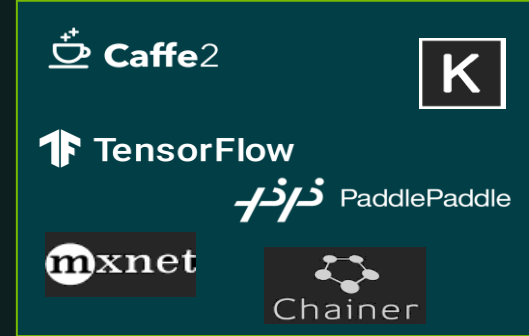
DEVELOPMENT



Lack of production ready models from Open-Source Model Zoo



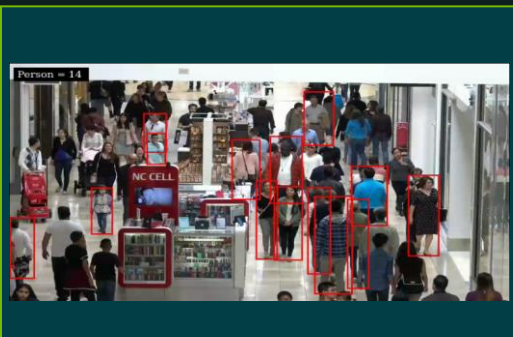
Need for enormous data to accurately train one of the open-source models



Need for Data Science & Deep Learning expertise to make models efficient

Challenges in Developing and Deploying AI products

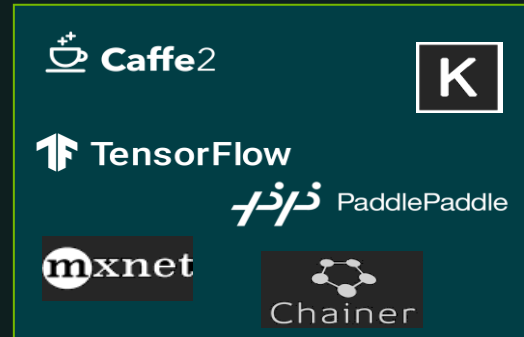
DEVELOPMENT



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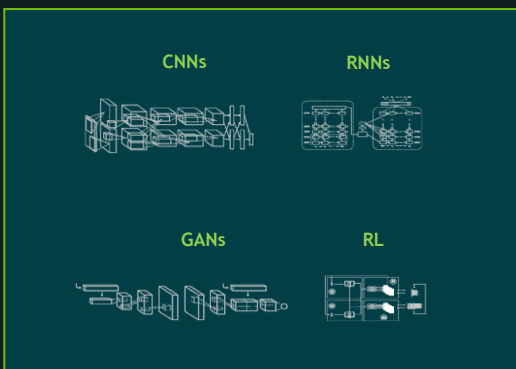


Need for enormous data to accurately train one of the open-source models

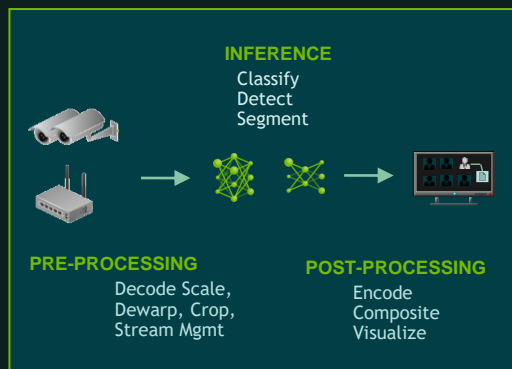


Need for Data Science & Deep Learning expertise to make models efficient

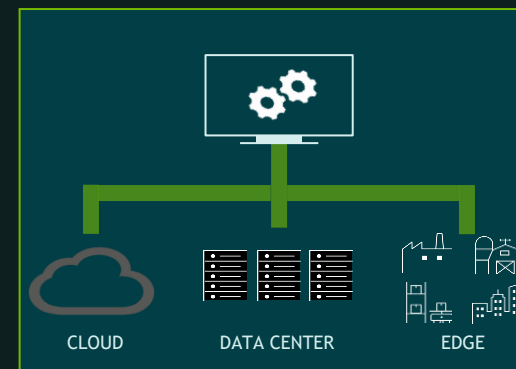
DEPLOYMENT



Growing Diversity & Complexity of Neural Nets



Full Stack Acceleration



Deploy and Manage at Scale

NVIDIA TAO FRAMEWORK

Train | Adapt | Optimize

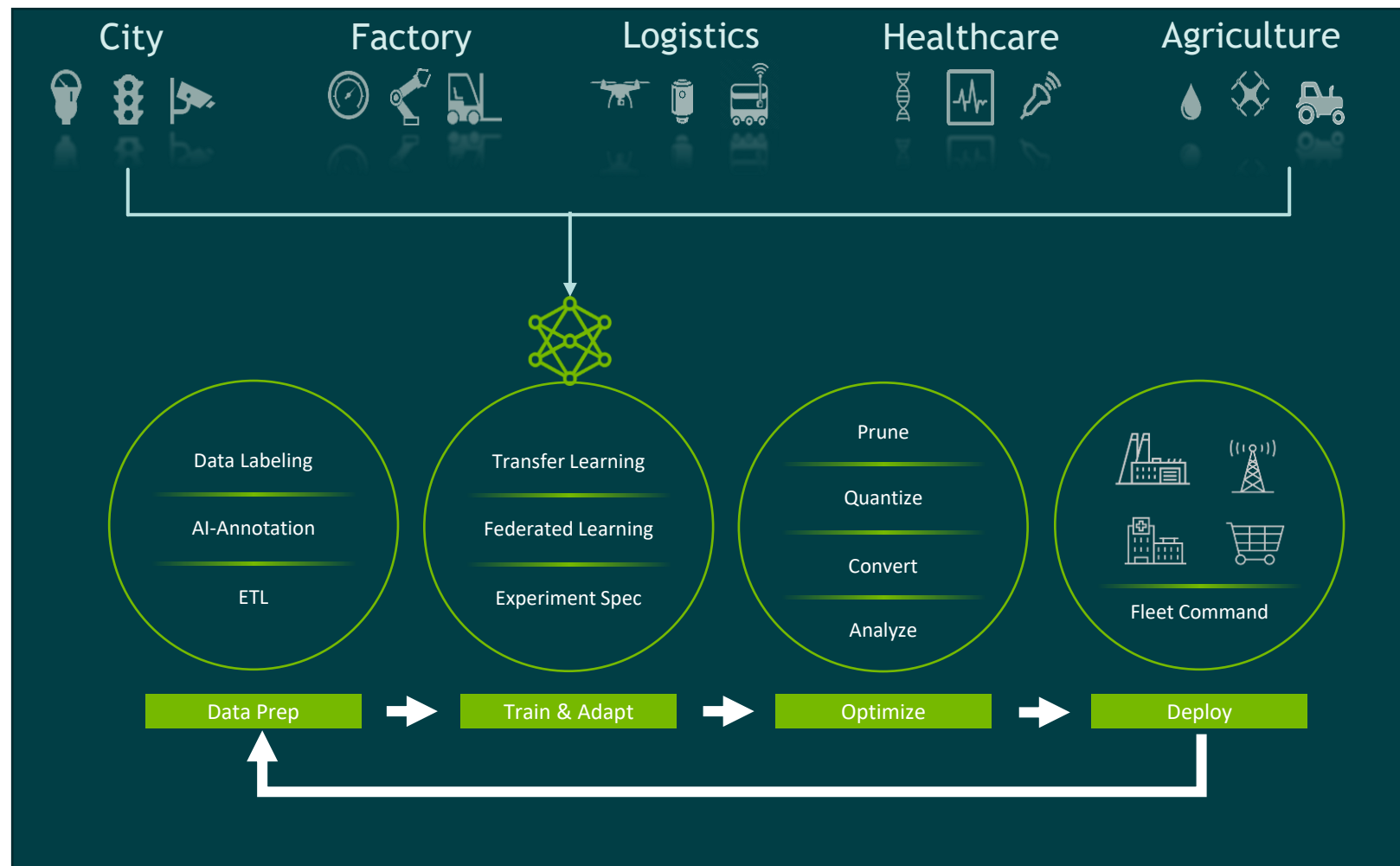
Simplifying Creation of Enterprise AI Applications

Pre-trained models across a variety of domains

10X speedup in AI development

Increase model performance while preserving data privacy

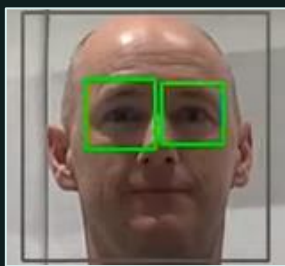
Seamlessly deploy from datacenter to edge with Fleet Command



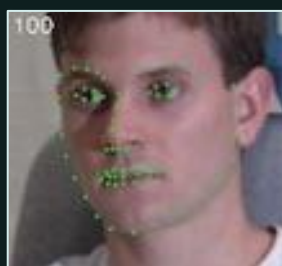
Production-ready PRE-TRAINED VISION AI models



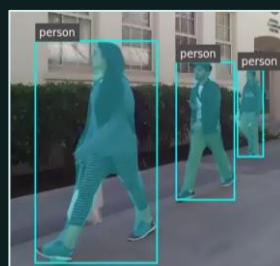
People Detection



Gaze Estimation



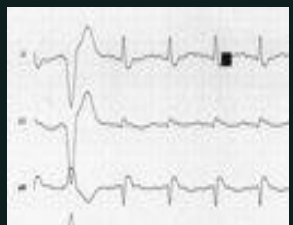
Facial Landmark



People Segmentation



Gesture Recognition



Heart Rate Estimation



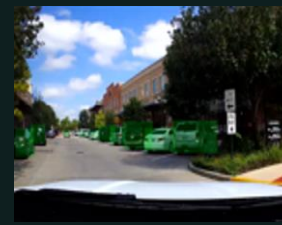
Emotion Recognition



Face Detect RGB



Face Detect IR



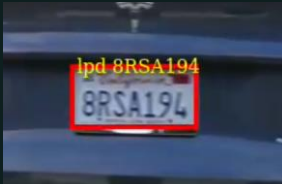
DashCamNet



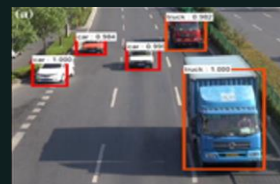
TrafficCamNet



License Plate Detection



License Plate Recognition



Vehicle Type net



Vehicle Make net

AI models for **Smart City, Public Safety, Retail, Healthcare & Robotics**

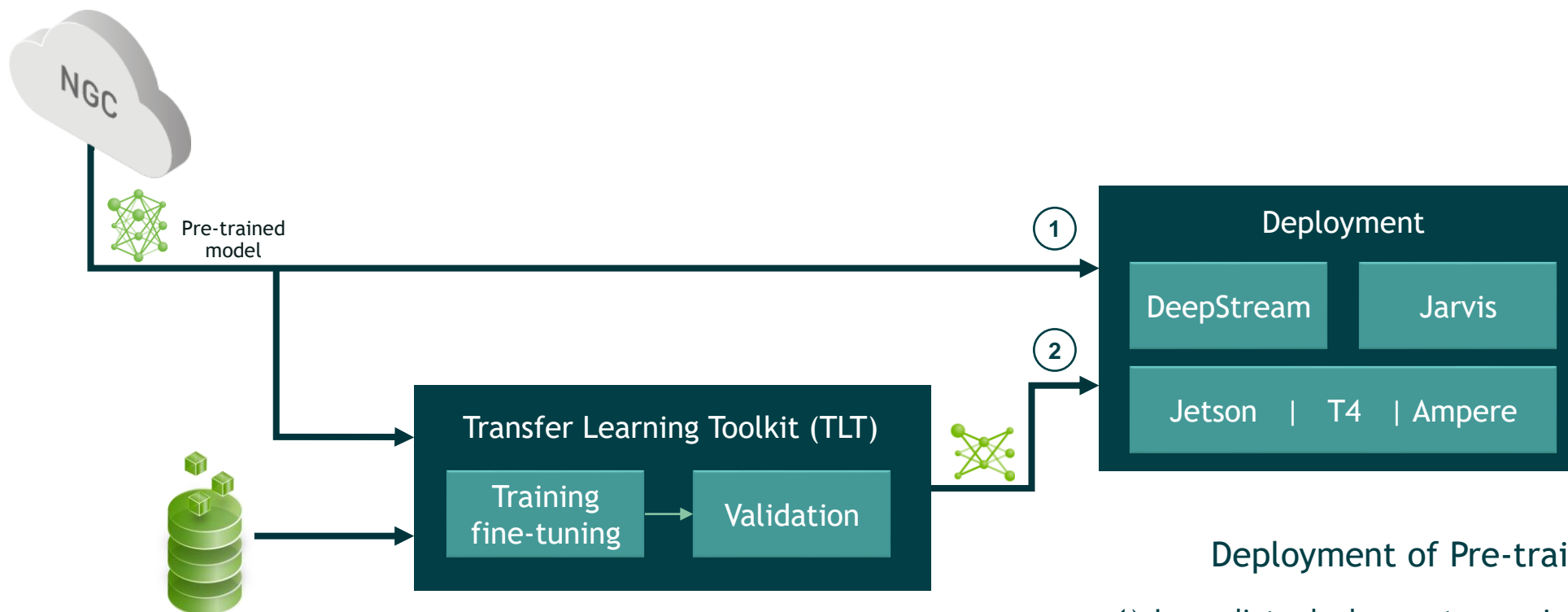
Over **80%** accuracy

Optimized for **High Throughput**

Deploy with turnkey inference examples

Transfer Learn with your dataset

Deploy pre-trained model



Deployment of Pre-trained models:

- 1) Immediate deployment on an inference platforms
- 2) Re-train on your dataset using TLT and deploy your model on an inference platform

Jetson Software for AI Edge Devices

City



Factory



Logistics



Healthcare



Agriculture



Ecosystem

AI Software and Services

Ecosystem

Machine Vision Cameras & Sensors

Ecosystem

System Software & Developer Tools

TRANSFER LEARNING TOOLKIT

Pre-trained models

Data Preparation & Augmentation

Train

Prune

DeepStream SDK

Isaac SDK

JetPack SDK

CUDA-X

Deep Learning



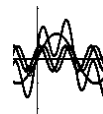
TensorRT
cuDNN

Multimedia



libargus
Video API

Accelerated Computing



cuBLAS
cuFFT

Computer Vision



VPI
VisionWorks
OpenCV

Sensors



Drivers
Ecosystem

Developer Tools

CUDA • Linux • RTOS

Jetson

Containers & Micro Services

Easier and Faster Deployment

- Eliminates complex, time-consuming builds and installs

Agile and Easier Development

- Update specific modules not the whole system

Scalability

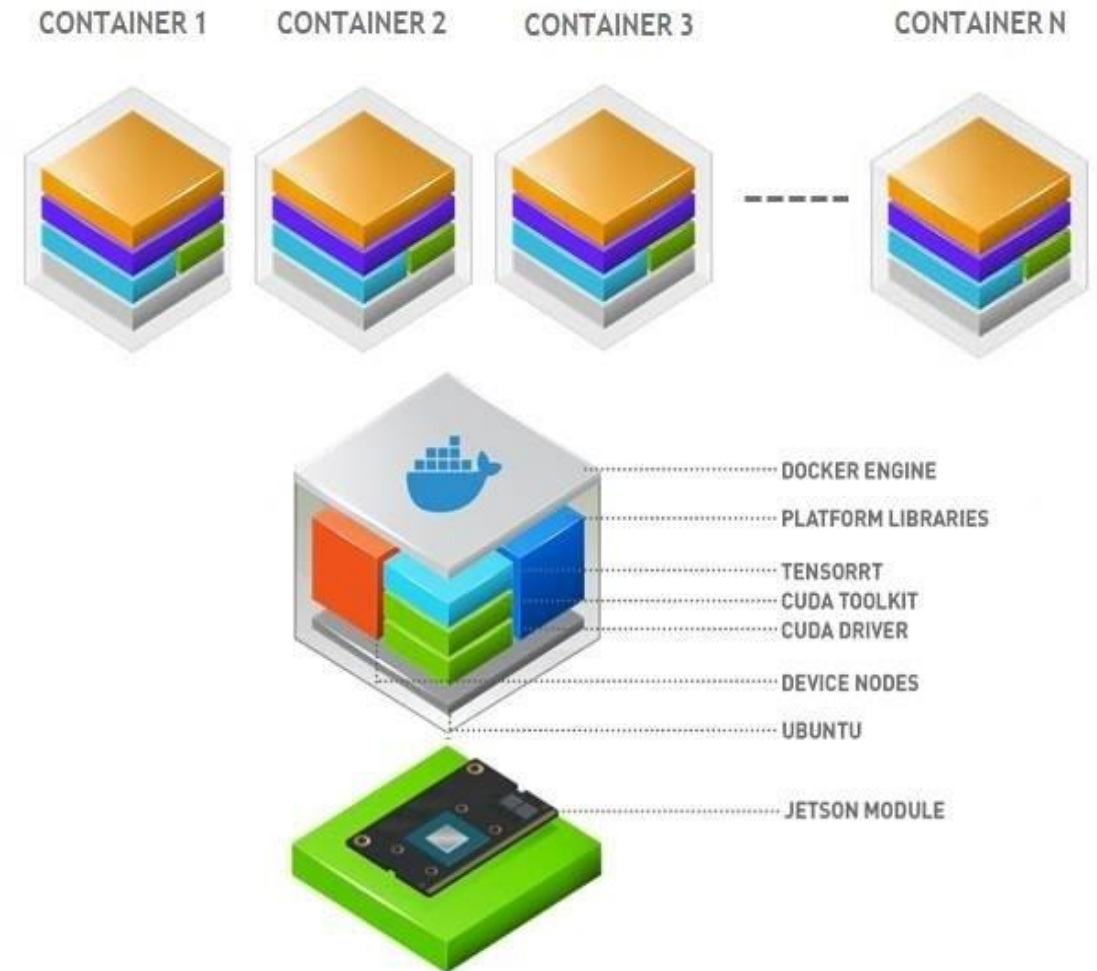
- Push the right container to the right platform

Portable

- Deploy across various environments, from test to production with minimal changes

Consistency Across Portfolio

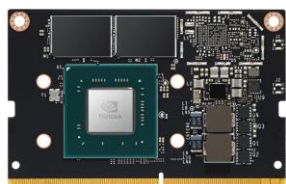
- Update once and push broadly



The Jetson Family

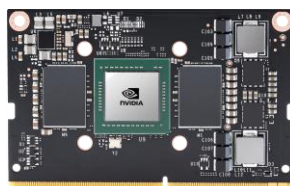
For AI-at-the-Edge and Autonomous System Designs

JETSON NANO
0.5 TFLOPS (FP16)



5 - 10W
45mm x 70mm

JETSON TX2 NX
1.33 TFLOPS (FP16)



7.5 - 15W
45mm x 70mm

JETSON TX2 series
1.3 TFLOPS (FP16)



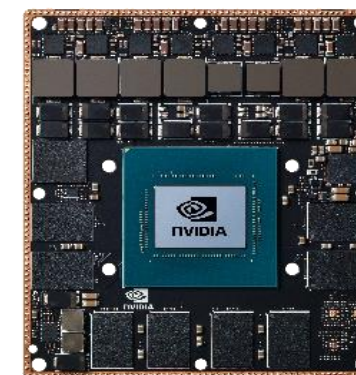
7.5 - 15W*
50mm x
87mm

**JETSON Xavier
NX**
6 TFLOPS (FP16)
21 TOPS (INT8)



10 - 15W
45mm x
70mm

JETSON AGX XAVIER series
11 TFLOPS (FP16)
32 TOPS (INT8)



10 - 30W
100mm x
87mm

Entry

Mainstream

Autonomous machines

Same software

The Jetson Family

For AI-at-the-Edge and Autonomous System Designs

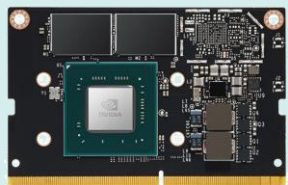
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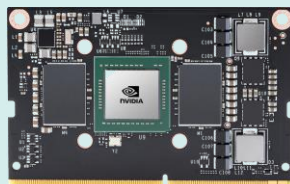
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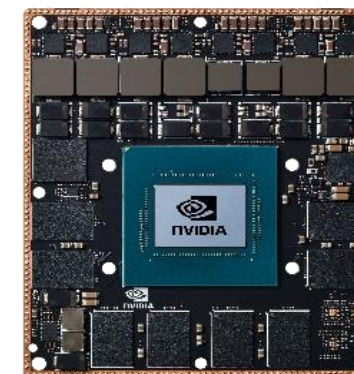
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Entry

Mainstream

Autonomous machines

Same software

JETSON ECOSYSTEM LANDSCAPE

DISTRIBUTION

SOFTWARE

ISV	TOOLS/SYSTEMS SW	CSP-IOT	SOFTWARE SERVICES

HW & SENSORS

CAMERA AND SENSORS	HARDWARE AND DESIGN SERVICES

NVIDIA Leading Development and Deployment of Edge AI

- 1 Customizable, Production Ready, Pre-Trained Models
- 2 Enabling Scale with a Cloud Native Software Defined Platform
- 3 Accelerating Action from Sensors to Analytics with AI

Jetson Ecosystem @ EVS 2021

AAEON

OEM/ODM partner with range of commercial and industrial products built with NVIDIA Jetson modules.

Demo

Hands-on demo of AAEON's AI@Edge Box powered NVIDIA Jetson Xavier NX, running multiple AI plugins for various applications.

Kiosk

Product portfolio, unboxing videos, meet the experts



Connect Tech

Hardware Partner with a vast offering of solution covering the entire platform, from carrier boards to integrated vision solutions.

Demo

Integrating Vision Sensors with NVIDIA Jetson Edge Applications

Kiosk

Product portfolio, overview video, meet the experts



D3 Engineering

Product development partner specializing in embedded design solutions for performance-critical products.

Demo

Synchronized 2D and 3D ToF Multi-Camera Demo on NVIDIA Jetson AGX Xavier

Kiosk

Product portfolio, whitepapers, overview video, meet the experts

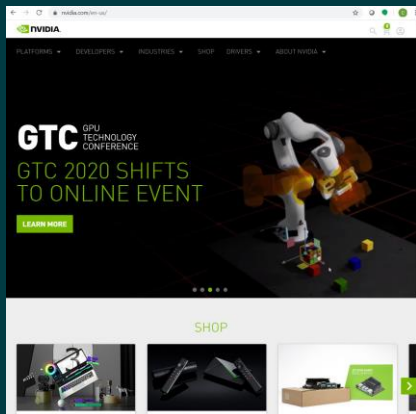


Jetson Information Resources

www.nvidia.com

Autonomous Machines

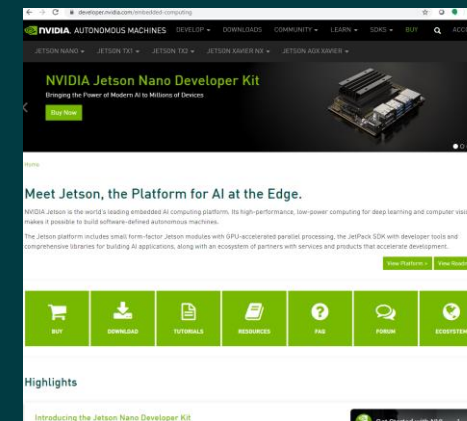
- ▶ Jetson Overview
- ▶ Application Examples
- ▶ [Autonomous Machines Blog](#)



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Embedded Development

- ▶ [Jetson Ecosystem](#)
- ▶ [Download Center](#)
 - ▶ Datasheets
 - ▶ Product Design Guides
 - ▶ Adaptation and Bring-up Guide
- ▶ [Jetson FAQ](#)



docs.nvidia.com

SW Documentation

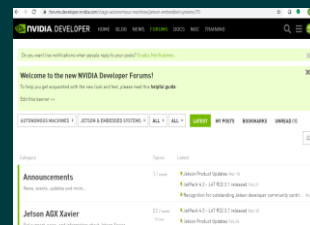
- ▶ JetPack Overview
- ▶ L4T Development Guide
- ▶ L4T Multimedia



forums.developer.nvidia.com

Support

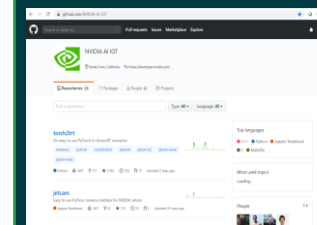
- ▶ Active participation
- ▶ Technical repository
- ▶ Search



github.com/NVIDIA-AI-IOT

Ref Designs

- ▶ Examples
- ▶ Tutorials



NVIDIA Experts Q&A



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Jetson Hardware Product Manager



Suhas Hariharapura Sheshadri
Jetson Software Product Manager



Chintan Shah
Pre-Trained Models & TLT
Product Manager



Durga Peddireddy
Imaging & Jetson Partner Manager