

DEEPCVIEW

VISION PACK FOR APPLICATION PROCESSORS



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The Vision Pack for Application Processors provides an end to end video pipeline middleware for optimized for vision ML applications with capture support for Video4linux2, libcamera, GStreamer, OpenCV & capture options.

GStreamer support is enabled through the DeepView Vision Pack plugins which automatically handle any type of GStreamer image or video to feed DeepViewRT inference engine and translate to meta-data output. This could be a local camera (CSI, USB, etc), a network camera, a video file, or any other video data which GStreamer can consume.

The Vision Pack plugins will automatically handle adapting and scaling the video frame to feed DeepViewRT with input data for the model using the fastest paths available based on the underlying SOC. This means automatically leveraging underlying ISP or GPU devices with graceful fallback to optimized NEON code when hardware acceleration is unavailable. This acceleration is made possible by our underlying VAAL “Vision Acceleration Abstraction Layer” which is also directly accessible for integration into OpenCV or other frameworks.

OpenCV integration provides our DMA optimized backend with OpenCV mat wrappers allowing OpenCV applications to seamlessly interface with DeepViewRT and gain underlying DMA and hardware acceleration.

Custom capture options can be easily integrated with the library, dmabuf or physical memory backed buffers can be consumed directly and pre-processing is automatically accelerated by the underlying hardware.

Benefits

- Production ready source code for implementing NPU accelerated smart camera sensor with custom trained models.
- Camera drivers built on libcamera for long term mainline support

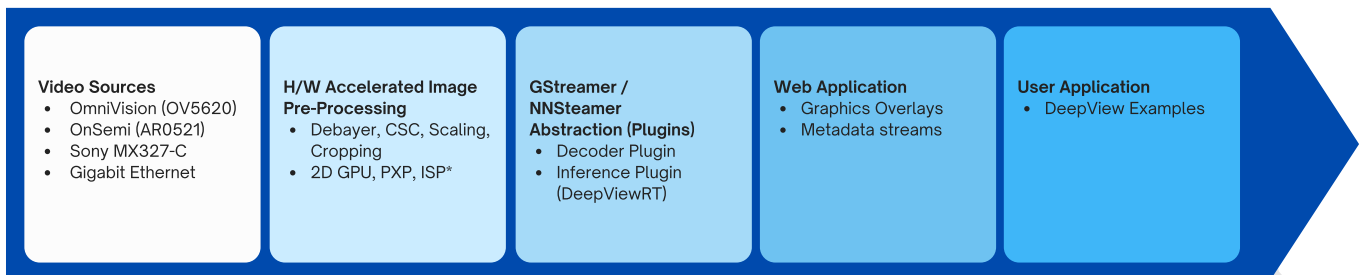
Key Features

- Fully Accelerated vision pipelines
- Zero copy data transfers to accelerate ML performance
- Support for GStreamer, libcamera & Video4linux2
- Independent video and metadata streams



**ACCELERATE YOUR
VISION PIPELINE**

Pipeline Architecture



Vision Pack for Application Processors

Features	Maivin	EVK
Video Sources		
OnSemi AR0521	Yes	No
OmniVision OV5620	No	Yes
Sony IMX327-C	Yes*	No
Gigabit Ethernet	Yes	Yes
Web Application <small>Visualize inference results and runtime parameters from a remote browser</small>	Yes	Yes
Functional Demos	Yes	Yes
Hardware Accelerated GStreamer Plugins		
Inference Plugin	Yes	Yes
Decoder Plugin	Yes	Yes
Graphic Overlay Plugin (Box, Skeleton, Parametrics, Labels)	Yes	Yes
Vision Pipeline Accelerator (VPAL)		
SOC Specific Hardware	Yes	Yes
<i>i.MX 8M Plus</i> NPU DMA	Yes	Yes
<i>i.MX 8</i> GPU DMA	Yes	Yes
Input Image Pre-Processing (2D GPU, CSC, Flip, Scale, Rotation, Cropping, etc.)	Yes	Yes

Maivin AI Vision Starter Kit

The Maivin AI Vision Starter Kit is a modular AI smart camera, built with production grade hardware and software components to work seamlessly with the DeepView Vision Pack for Application Processors.

Key Features:

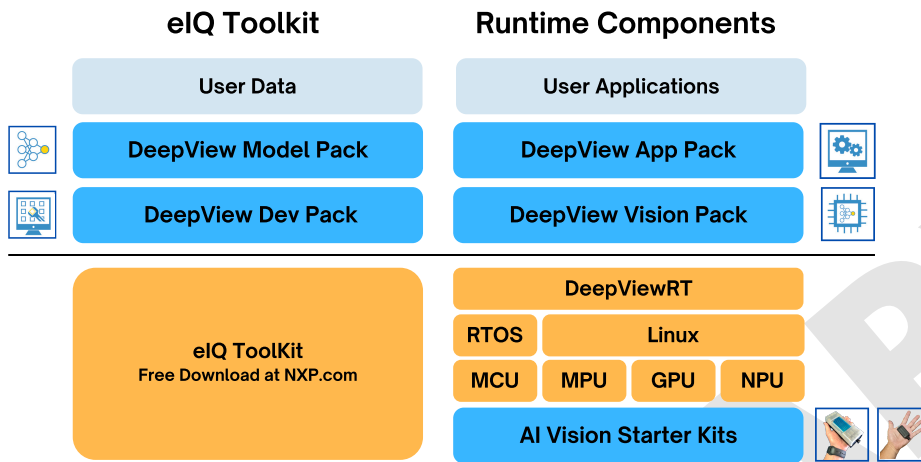
- Fully integrated solution, supporting object detection and classification models trained with the eIQ Toolkit without any firmware development.
- Preloaded with trial versions of the DeepView Vision Pack for Application Processors and DeepView Model Pack included with purchase.
- Industry leading machine learning inference performance on the i.MX 8M Plus using DeepViewRT, which has been optimized for NPU architecture.
- JSON API for reporting low bandwidth AI model inference results.
- Full production grade design IP available for license so you can fully customize for your product cutting years off your time to market.
- Modular design supports quick customization for other image sensors or interface options.
- Industrial Grade Toradex Torizoncore open source BSP

What's in the Kit

- Free trial of DeepView Vision Pack for Application Processors & DeepView Model Pack
- Quick start guide with links to full User Guide
- Pre-configured detection examples
- Maivin AI Vision Sensor
- All necessary cabling
- Tripod for bench top testing
- 12V Power supply with international plug adapters



Build Your Vision Sensor Today



DeepView Development Pack

The Dev-Pack is a bundle of eIQ Toolkit add-on features designed to extend what developers can do with the baseline eIQ Portal providing developers with a practical set of tools to instrument, optimize and deploy highly tuned machine learning solutions on target.



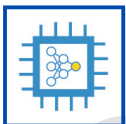
DeepView Model Pack for Detection

DeepView Model Pack is a bundle of state-of-the-art detection models pretrained with COCO and OpenImages and has been fully tested & optimized for NXP RT Crossover MCU's and i.MX8 Application Processors.



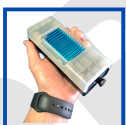
DeepView Application Pack | Tracking on MCU

The Tracking Application Pack is the amalgamation of a Au-Zone's proprietary tracking algorithm, DeepViewRT, VisionPack for MCU and ModelPack to provide an integrated solution for Multi Object Tracking on a microcontroller.



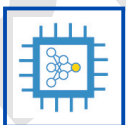
DeepView Vision Pack for Application Processors

The Vision Pack for Apps Processors provides developers with an end to end, hardware accelerated video pipeline for optimized AI based Vision applications. Fully integrated with DeepViewRT inference engine for the high performance / low overhead AI vision solution on Applications Processors.



Maivin AI Vision Starter Kit

The Maivin AI Vision Starter Kit is a modular AI smart camera platform built on NXP's i.MX8MPlus Applications Processor and production grade hardware and software components to enable rapid prototyping and field deployment of custom Vision Solutions. The Maivin targets applications where compute performance is the priority.



DeepView Vision Pack for MCU

Production ready MCU project with hardware optimized vision pipeline for highest performance on MCU class devices. Fully integrated with DeepViewRT inference engine for the high performance / low overhead AI vision solution on MCU.



Micro AI Vision Starter Kit

The Micro AI Vision Starter Kit is a modular AI smart camera platform built on NXP's i.MXRT1064 Crossover MCU and production grade hardware and software components to enable rapid prototyping and field deployment of custom Vision Solutions. The Micro targets applications where lower cost, design complexity and size are prioritized over computer performance

Smarter devices. Safer environments. Increased product value. Novel customer experiences. These are just some of the benefits that you can achieve with Visual Intelligence at the Edge. With more than a decade of experience helping our customers get their embedded computer vision solutions into production, Au-Zone Technologies delivers DeepView advanced vision solutions and tools to support your AI and machine learning project development and help you quickly and confidently reduce your time to market.

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