

EVA SDK

Edge Vision Analytics (EVA) Software Development Kit (SDK) for ADLINK AI Vision Products



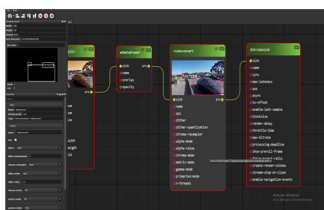
Introduction

EVA SDK is a unified edge vision analytics service-ready software platform that enables ADLINK AI hardware, making it easier for users to develop optimized edge AI vision applications by simplifying integration and focusing on essential functionality. Users can leverage ready-to-use open-source plugins to facilitate each stage the AI vision project lifecycle, including image capture and processing, AI inference, post-processing, and analytics. This "One API" framework allows users to successfully build a proof-of-concept in two weeks and speed up mass deployment time.

Key Features

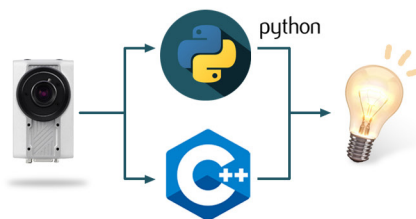
The Best PoC Tool for Edge AI Vision Applications

- AI Pipeline Studio



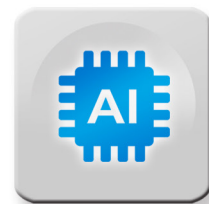
GUI interface for AI applications, editing, executing, debugging, and performance profiling

- Abundant Ready-to-use Plugins



Hardware codec, image processing, and edge communication, including stream out

- Optimized AI Models



Object classification, detection, segmentation, and human posture detection

Easy Migration from Lab Test to Field PoC

- Supports Hybrid AI Inference Engines Simultaneously in a Pipeline



- NVIDIA: GPGPU, Jetson
- Intel: CPU, iGPU, VPU

- Support Multiple Industrial Camera Types



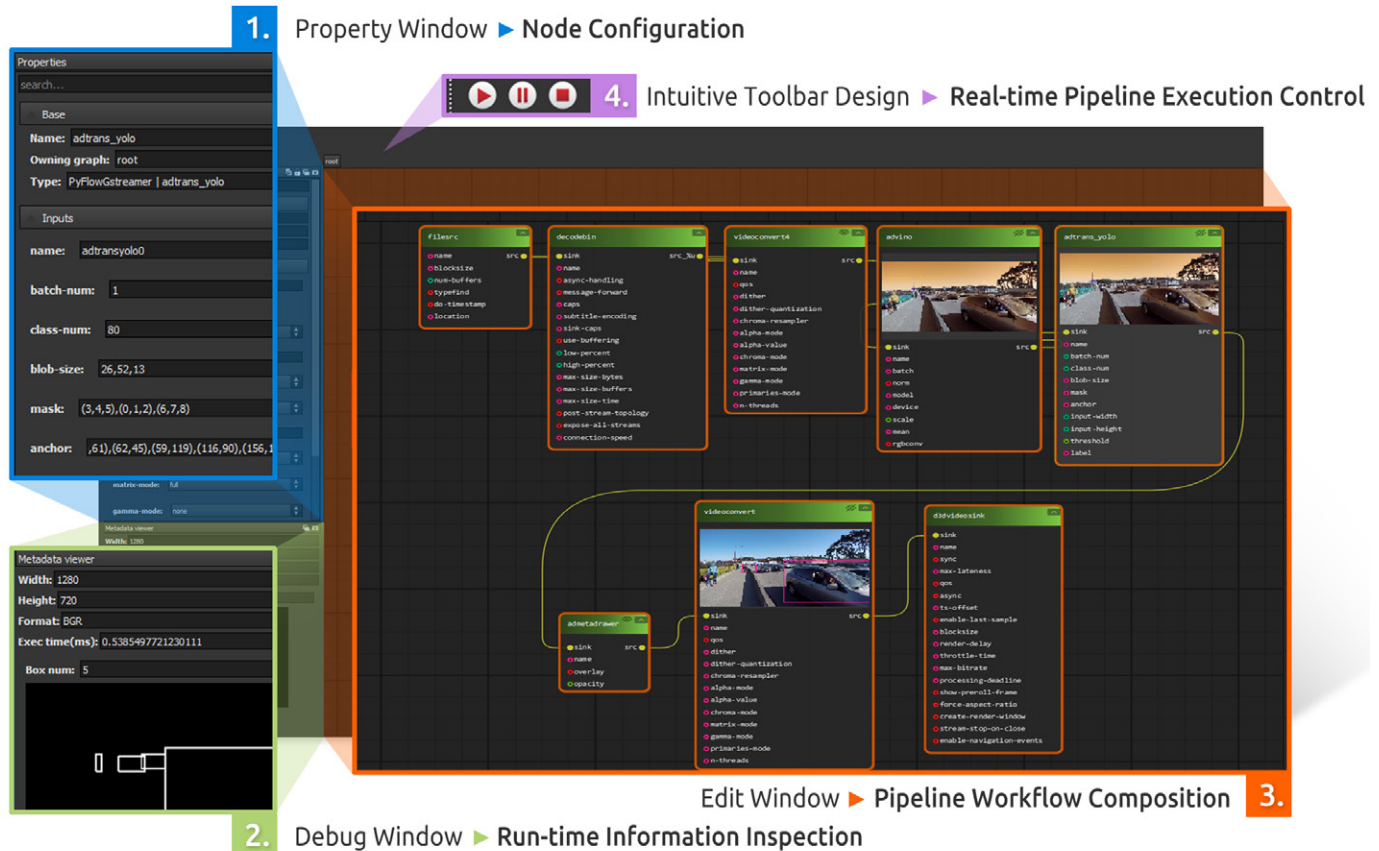
- Basler, FLIR, Hikrobot GigE and USB3 vision camera
- RTSP, V4L2

- Supports Operation between Different Operating Systems



No porting effort for platform migration

Intuitive GUI for Fast and Easy AI Inference Pipeline Development



The screenshot displays the ADLINK AI Inference Pipeline GUI with several key components highlighted:

- 1. Property Window ▶ Node Configuration:** A sidebar on the left showing configuration for the 'adtrans_yolo' node, including inputs, batch-num, class-num, blob-size, mask, and anchor.
- 2. Debug Window ▶ Run-time Information Inspection:** A window below the property window showing metadata (Width: 1280, Height: 720, Format: BGR) and execution time (0.5385497721230111).
- 3. Edit Window ▶ Pipeline Workflow Composition:** The main workspace showing a pipeline workflow with nodes like 'filesrc', 'decodbin', 'videocomrt4', 'adrtino', 'adtrans_yolo', 'videocomrt', and 'datavideosink'. Each node has a configuration panel.
- 4. Intuitive Toolbar Design ▶ Real-time Pipeline Execution Control:** A toolbar at the top center with play, pause, and stop buttons.

Key Functions



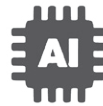
Image Capturing

- Basler USB3/GigE camera
- FLIR USB3/GigE camera
- Hikrobot USB3/GigE camera
- RTSPS stream
- V4L2
- Video/Image files



Image Pre-Processing

- NVIDIA H.264/H.256 HW CODEC
- Intel H.264/H.265 HW CODEC
- Pixel format transfer
- Image rotate/flip/crop
- Gamma correction
- Median filter
- Brightness, contrast, hue, saturation



AI Inference

- Object Classification
- Object Detection
- Segmentation
- Human pose
- Customized model



Connectivity

- RTSP stream out
- AWS connector
- DDS data river (2021.Q3)
- ROS2 (2021.Q3)
- MS Azure Connector (2021.Q3)

Programming language: C/C++, Python
 Operating system: Windows 10, Ubuntu 18.04

AI Models Verified on EVA

Application	Network	Original Framework	TensorRT	OpenVINO
			Verified	Verified
Classification (OK/NG, or sorting)	GoogLeNet	Caffe	V	V
	MobilenetV2	ONNX	V	V
Defect/Object Detection	SSD Inception-V2	Tensorflow	V	-
	Face detection (SSD based)	Caffe	X	V
	Yolov3	Darknet	V	V
	Yolov4	Darknet	V	-
	Yolov3-tiny	Darknet	V	-
Pose Detection	OpenPose	PyTorch	V	V
Segmentation	FCN-Alexnet	Caffe	V	X
	Intel Segmentation	Caffe	X	V

Note: The specific configuration of neural network and original framework is validated and supported by EVA.
For other configuration options, please contact ADLINK for support.

Supported AI Vision Platforms & Cameras

Product Type	Model
AI Smart Camera	NEON-2000-JT2-X
	NEON-2000-JNX
Vision System	EOS-i6000-P
	EOS-JNX-I / EOS-JNX-G