

AI Gateway for Quality Inspection

AI is complex. Deploying AI shouldn't be.

Pleora's AI Gateway simplifies the deployment of advanced machine learning capabilities to improve the reliability and lower the cost of visual quality inspection. Designed to work with existing inspection hardware and software, the embedded platform integrates plug-in vision inspection AI skills, a user-friendly approach to integrate custom capabilities, and a powerful NVIDIA GPU to accelerate the development of more advanced machine learning and computer vision algorithms.

Smarter Inspection

Easily employ machine learning and AI to reduce costly inspection errors, false-positives, and secondary screenings that waste human resources and slow processes

Preserve Investments

Upgrade existing cameras, software, and vision algorithms while deploying AI image processing capabilities

"No Code" Plug-in AI Skills

Deploy AI skills without any additional programming — built-in AI classification, sorting, and defect detection and powerful processing to add advanced machine learning capabilities

Scalable for Industry 4.0

Upload custom image processing and AI algorithms written in Python and let Pleora's OS — built on eBUS SDK — handle the rest



Smart AI and Image Processing Platform

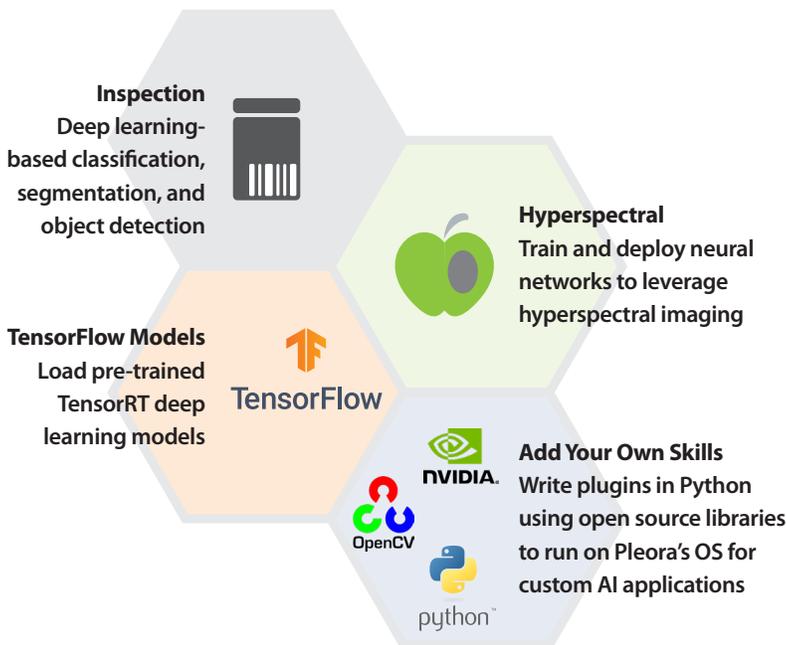
AI is revolutionary, but Pleora's platform makes it evolutionary by enabling a cost-effective hybrid deployment architecture. Integrate existing and advanced sensor sources, while leveraging "plug-in" and custom AI skills, to seamlessly evolve towards Internet of Things (IoT) and Industry 4.0 applications.



- **Don't throw away your "dumb cameras"** – upgrade existing hardware, software and algorithms by adding advanced sensors and AI image processing capabilities
- **Plug-in AI Skills** – built-in classification, sorting and defect detection with web-based interface for "no code" algorithm training and powerful NVIDIA GPU to accelerate deployment of more advanced machine learning algorithms
- **Fully scalable** – operating system, built on Pleora's widely deployed eBUS SDK, provides a user-friendly framework to upload custom AI and machine learning skills developed in Python to the platform
- **Standards-based solution** – avoid vendor lock-in and the need to support multiple APIs while using the cameras, sensors, and software best suited for your application

Plug-In AI Skills

AI plug-ins for classification, sorting, and defect detection – no coding required to add advanced machine learning image processing skills.



How it Works

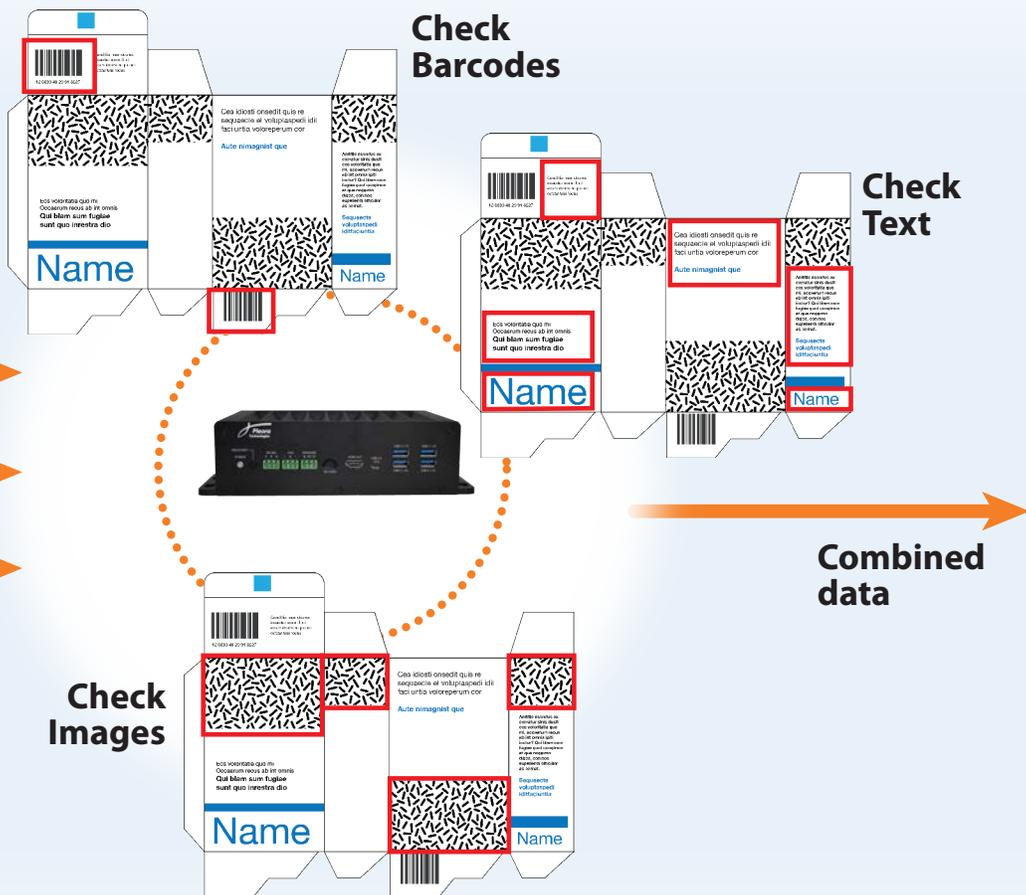
1 Connect a Camera

Pleora's AI Gateway supports a wide range of interface protocols. Connect any supported GigE Vision, USB3 Vision, CameraLink or MIPI camera or sensor from any vendor directly to the device. Don't have a camera? Add Pleora's 4K USB 3.0 camera to your system and start streaming images immediately.



3 Scale Your Processing

The highly configurable AI Gateway can be upgraded for complex vision applications requiring more powerful AI image processing capabilities or to address various sensor interfaces. For applications requiring distributed vision processing, additional nodes can be added to the system to build an AI mesh network. For example, individual devices can be configured for different defect types. Pleora's AI Gateway ensures seamless communication between all connected devices, with the master node combining each skill and transmitting data to your GigE Vision application.



2 Set up an AI Skill

End-users and integrators can easily deploy AI skills without any additional programming knowledge. Images and data are uploaded to "no code" training software on a host PC, which generates a neural network that is deployed onto the Pleora AI Gateway. Connect to the Pleora device and configure the desired AI skills, including plug-in and customized capabilities. For example, choose OpenCV edge detection to run on the device.

4 Run your Existing Application

Connect the Pleora AI Gateway to your PC and receive the live processed data. Run your existing machine vision application, or use the supplied Pleora eBUS SDK to start developing your own front-end application. The Pleora device acts like any vision standard-compliant device, and provides GenICam access to all of the settings of your installed cameras or sensor to maintain compatibility with existing applications.

Bring AI into Real-World Applications

Pleora's AI Gateway provides a hybrid approach that allows system designers, integrators, and end-users to add more advanced AI capabilities alongside existing sensor sources and classic computer vision algorithms.

FEATURES

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| GigE Vision Streaming | Video Streaming Input and Output over GbE |
| GenICam Mirroring | Ability to mirror Camera GenICam nodes for control |
| GPU | NVIDIA Pascal 256 GPU (1.3 TFLOPS) |
| CPU | 6-core ARM CPU |
| Memory | 8GB |
| Standard Plug-ins | Standard plug-ins for AI and Image Processing with sample code |
| Programming Languages | Python |
| Libraries | OpenCV, TensorFlow, TensorRT, CUDA |
| Optional Plug-ins | "No code" Inspection Module, "No code" Hyperspectral Module |

CONNECTORS

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|------------------------------|---|
| Ethernet | 5x Gigabit Ethernet ports |
| USB 2.0 | 1 x Micro-B OTG |
| USB 3.0 | 4 x Type-A |
| Display | 1 x HDMI 2.0b Type A (max resolution: 3840 x 2160 @ 60Hz) |
| Serial Communications | 1x RS-485, 1x CAN 2.0b |
| Expansion Header | 7x GPIOs |

CHARACTERISTICS

| | |
|-----------------------------------|--|
| Size (L x W x H) | 226.0 mm x 122.0 mm x 59.9 mm |
| Weight | 2.0 kg approximately |
| Operating Temperature | 0°C to 70°C |
| Storage Temperature | -20°C to 85°C |
| Relative Humidity | 40°C @ 95%, non-condensing |
| Power In | 54V / 2.78A |
| Power Consumption | 15 W |
| Vibration during operation | With desk/wall mount: 3 Grms, IEC60068-2-64, random vibration, 5 ~ 500 Hz, 1 hr/axis |
| Shock during operation | 30G, IEC60068-2-27, half sine, 11m duration |

ORDERING INFORMATION

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| 901-1000 | AI Gateway - GigE Vision and USB3 Vision compliant embedded industrial computing platform with pre-installed AI Gateway Software which includes the base plug-in module for Python development and sample plug-ins. Includes power supply and eBUS SDK USB stick. |
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Learn more at pleora.com