ADLINK AI Vision Products
Powered by Intel® Technologies

Chiawei Yang, ADLINK
Five Focused Applications

AI Vision
AMR
Connected Factory
Predictive Maintenance
AR for RS
AI Vision Empowers Smart Factory

Product

Conventional Machine Vision Algorithms plus AI Vision Modeling

Operation

Scalable & Sustainable AI NVR Manageability & Provisioning

ADLINK AI Vision @Smart Factory
Field APP & Live Demo of POS Detection
**AI x AOI Contact Lens Inspection**

**All Defect Inspection**

- Transparency
- Bubbles
- Water Ripple

**50X Throughput Improved**

0.4S VS. 20S (by operator manually)

**95% Accuracy VS. 30% by Traditional AOI**

- **Deep Neural Network**

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Leading EDGE COMPUTING

EOS-i614A - adlinktech.com
Overview
With the challenge to acquire quality images of metal surfaces and identify the defects, e.g. water stains on the surface, the manufacturer is forced to utilize many human beings to sort the failed goods out.

Solution
An AI Vision platform was provided for inference with specific AI model based on ADLINK EVA™ SDK, PyTorch framework and RESnet topology, and the Intel® Distribution of OpenVINO™ toolkit to detect the water stains.

ADLINK’s Product
EOS-i614A-MYDX is powered by 9th Generation Intel® Core™ processors, Intel® Movidius™ Myriad™ X VPUs (Vision Processing Units), the Intel® Distribution of OpenVINO™ toolkit, as well as ADLINK EVA™ SDK.

User Benefits/Why ADLINK
- 95% accuracy with highest throughout enhanced the performance of human-made
- Open-box solution to reduce the risk and effort by integrating PoE camera, AI inference model.
Edge Smart Pallet

ADLINK Edge™ software to scan barcodes on pallets, cross-reference against inventory, and stream data in real time at the edge to warehouse management systems, ERP, and employees.
EOS-i614A-MYDX
High AI computing for intelligent robots
• High AI computing
• Industrial PoE camera supported
• Intel® Distribution of OpenVINO™ toolkit & Ubuntu pre-installation

AI Smart Camera

NEON-1000-MDX
AI smart camera
• Compact & industrial certified
• All-in-on set, incl. image sensor, I/O as well as computing unit
• Intel® Distribution of OpenVINO™ toolkit & Ubuntu pre-installation

VIZI-AI
Modules for rapid development
• SMARC module
• AI Vision development kit
• ADLINK EDGE™ Software

AI Vision Platform

DEV Kit
<table>
<thead>
<tr>
<th>Model Name</th>
<th>Vizi-AI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Specification</strong></td>
<td></td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Atom® x5-E3940 SOC</td>
</tr>
<tr>
<td>VPU</td>
<td>Intel® Movidius™ VPU Myriad-X</td>
</tr>
<tr>
<td>Memory</td>
<td>4GB LPDDR4 (max 8)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x MicroSD for external storage</td>
</tr>
<tr>
<td>Video/Audio</td>
<td></td>
</tr>
<tr>
<td>HDMI</td>
<td>1x HDMI</td>
</tr>
<tr>
<td>LVDS/eDP</td>
<td>Optional single channel on flat cable</td>
</tr>
<tr>
<td>Audio codec on carrier</td>
<td>Stereo headphone audio connector</td>
</tr>
<tr>
<td>Network</td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>1x Gb Ethernet full speed RJ-45</td>
</tr>
<tr>
<td>I/O</td>
<td></td>
</tr>
<tr>
<td>USB</td>
<td>USB 3.0 x2, USB 2.0 x2, USB 2.0 Client x1</td>
</tr>
<tr>
<td>MRAA compliant 40 pin connector</td>
<td>GPIO, AD, PWM, 12C, RS232, SPI</td>
</tr>
<tr>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>Standard input</td>
<td>12V  (110/220V 2.5A adapter for US or EMEA)</td>
</tr>
<tr>
<td>Software</td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>Linux (Debian 9.9)</td>
</tr>
<tr>
<td>ADLINK</td>
<td>ADLINK Edge™ Vision Software Stack</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AI Model Manager</th>
<th>Frame Streamer</th>
<th>OpenVINO Engine</th>
<th>AWS Model Streamer</th>
<th>Training Streamer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leading EDGE COMPUTING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is NEON-1000-MDX?
The 1st AI-enabled smart camera powered by Intel Atom® processors and Intel® Movidius™ Myriad™ X VPU (Vision Processing Units)

Rich Connectivity Interfaces
FPGA-based DI/O design provides accurate H/W triggering and USB Type-C hub reduces cable connections

Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit) Inside
Powerful integrated Intel® Movidius™ Myriad™ X VPU supports the models optimized by the Intel® Distribution of OpenVINO™ toolkit

High Reliability and Capability
CE/FCC/Safety verified, shock, vibration, temp. cycle validated, no reliability issues

All-in-One
All-in-one design saves the compatibility and cables, also reduces the effort of installation and maintenance

Integrated Camera Sensor Module
Supports 4 types of Basler image sensors to cover various AI vision applications requiring high image quality
Start Your AI Vision with the NEON Starter Kit

**NEON-1000-MDX Kit Option**

**Starter Kit**

(1) NEON-1000-MDX
(2) USB Type-C adapter/hub
(3) 1.8m USB Type-C cable w/screw lock
(4) Power cord
(5) Lens
(6) DI/O cable
(7) DIN37 I/O extension board
(8) 30cm USB Type-C cable

**Lite Kit**

(1) NEON-1000-MDX
(2) USB Type-C adapter/hub
(3) 30cm USB Type-C cable
(4) Power cord
# AI Vision Platform EOS-i6000-M

<table>
<thead>
<tr>
<th>Model Name</th>
<th>EOS-i614A-MYDX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Interface</td>
<td>4 GigE w/ PoE</td>
</tr>
<tr>
<td>CPU Supports</td>
<td>Up to 9th Generation Intel® Core™ i7 processor</td>
</tr>
<tr>
<td>System Memory</td>
<td>16GB</td>
</tr>
<tr>
<td>Storage</td>
<td>512GB SSD</td>
</tr>
<tr>
<td>VPU</td>
<td>4x Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit)</td>
</tr>
<tr>
<td>Dimension</td>
<td>206 (W) x 240 (D) x 210 (H) mm</td>
</tr>
<tr>
<td>DI/O</td>
<td>8-ch DI and 8-ch DO</td>
</tr>
<tr>
<td>Display Port</td>
<td>2x DP++</td>
</tr>
<tr>
<td></td>
<td>1x DVI-D</td>
</tr>
<tr>
<td></td>
<td>1x VGA</td>
</tr>
<tr>
<td>Serial ATA</td>
<td>4x SATA</td>
</tr>
<tr>
<td>USB</td>
<td>3x USB 3.1 Gen 2</td>
</tr>
<tr>
<td></td>
<td>3x USB 2.0</td>
</tr>
<tr>
<td></td>
<td>1x internal USB 2.0 dongle</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1x PCIe x16 (Reserved)</td>
</tr>
<tr>
<td></td>
<td>1x PCIe x4 (frame grabber pre-installed)</td>
</tr>
<tr>
<td></td>
<td>1x PCIe x4 (Reserved)</td>
</tr>
<tr>
<td></td>
<td>1x PCI (Reserved)</td>
</tr>
<tr>
<td>Mini PCIe</td>
<td>1x Full size (USB 2.0 + PCIe)</td>
</tr>
<tr>
<td>M.2</td>
<td>1x 2280/3042: USB 3.1, SATA III and PCIe x2</td>
</tr>
</tbody>
</table>

**EOS-i6000-M Series**

Compact AI GigE Machine Vision System with Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit)

- **9th Generation Intel® Core™ i7 processor**
- **280 Watt** Power Supply (Max), ample power budget
- **4x** Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit)

For classification and detection applications

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**AI Vision Platform EOS-i6000-M**

Leading EDGE COMPUTING

adlinktech.com
Kick-Start Your AI Journey with ADLINK

**Quick Demo**
- No programming needed
- No HW/OS boundaries

**Quick PoC**
- Reference code provided to duplicate inference
- No hassles of connecting the camera or pre-processing

**Quick Rollout**
- Worry-free software IP security
- Industry-standard certifications

2 Days

2 Weeks

2 Months
Key Elements to Consider for a PoC

**VISION**
- Image Source
- Image Pre-processing
- Computer Platform

**AI**
- AI Model Repository
- AI Accelerator
- AI Inference Engine

Image Source
- VISION
- AI

AI Model Repository
- Microsoft Azure
- AWS

AI Accelerator
- GPUs
- AI cards

AI Inference Engine
- TensorFlow
- OpenVINO
- ONNX

Leading EDGE COMPUTING
Fast Prototyping with EVA

PoC in 4 Steps

Step 1: Integrate a Camera
Step 2: Select Inference Engine
Step 3: Deploy AI Model
Step 4: Select Vision System
Stay with ADLINK for AI
One API x One Platform Offerings starts the AI Vision Journey

Best C/P EDGE Platform for easy integration

Optimize on Windows / Linux rapid development time

Reusable AI model & EDGE connectivity

EOS-i6000-M Series
Compact AI GigE Vision Systems for the Edge with Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit)
Thank you for watching!
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