SOLUTION BRIEF

Intel® AI: In Production
Strategic Alliance

ADLINK and Intel Simplify Edge AI Deployment for Machine Vision Applications

This solution combines Intel® Distribution of OpenVINO™ toolkit, AWS IoT Greengrass*, Amazon SageMaker*, and ADLINK Edge* to simplify edge AI deployments.

Industrial Machine Vision AI has the power to rapidly accelerate digital transformation and create innovative, new business models generating real business value by increasing automation, minimizing downtime, improving worker safety and identifying defects for example. When you can train any smart camera to see anything faster than the human eye and process data within milliseconds, the potential is phenomenal. The challenge is to find a cost effective solution that can manage such high volume image data streams, overcome bandwidth and latency issues and harness insight from machine learning to enable real-time decisions and action.

At a Glance

The ADLINK AI at the Edge solution features:

» Intel® Distribution of OpenVINO toolkit, optimize deep learning workloads across Intel® architecture, including accelerators, and streamline deployments from the edge to the cloud.

» The ADLINK Data River*, offering translation between devices and applications to enable a vendor-neutral ecosystem to work seamlessly together. Lower cost and power by removing or reducing components.

» The ADLINK Edge* software suite, which builds a set of deployable applications to communicate with end-points, devices or applications and which publish and/or subscribe to data topics on the ADLINK Data River.

Challenge

A high volume warehouse distribution and logistics operation required increased automation to replace manual scanning in order to improve accuracy and efficiency of loading packages on correct pallets, to improve worker safety and to reduce theft and damage.

Solution

The ADLINK's machine vision-based IoT solution with smart cameras, IoT gateways and ADLINK Edge* software was deployed to scan barcodes on pallets, detects errors and stream data in real-time at the edge to warehouse management systems, ERP, and employees.

ADLINK Edge* software works seamlessly with AWS IoT Greengrass* and Intel® Distribution of OpenVINO™ toolkit, enabling users to train and test machine learning models then deploy them to edge devices and continuously learn and improve the process to maximize the benefits of Machine Vision AI. Together with this powerful partner ecosystem and our scalable, plug and play hardware, ADLINK makes deployment and integration faster, easier and more cost effective so our industrial customers can optimize operational efficiency and drive business value.

» Intel® Distribution of OpenVINO toolkit, optimizes deep learning workloads across Intel® architecture, including accelerators, and streamline deployments from the edge to the cloud.

» Amazon SageMaker*, a fully-managed service that covers the entire machine learning workflow.

"We've worked on multiple industrial use cases that benefit from AI at the edge, including a smart pallet solution that makes packages and pallets themselves intelligent so they can detect where they're supposed to be, when they're supposed to be there, in real-time. This enables warehouse customers to yield improved logistics and productivity, while also decreasing incorrectly shipped packages and theft. And this use case can be replicated across verticals to improve operationalefficiency and productivity."

- Toby McClean, VP, IoT Innovation & Technology, at ADLINK.

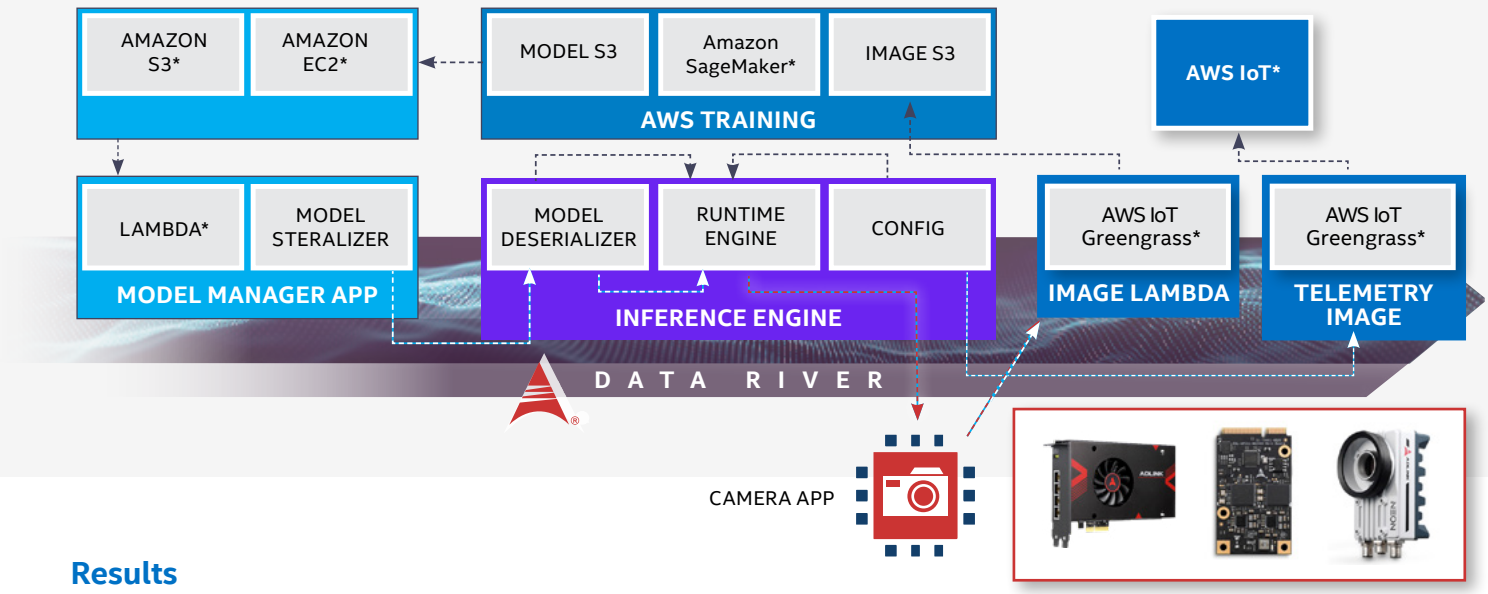
» AWS IoT Greengrass*, which extends AWS to edge devices so they can act locally on the data they generate, while still using the cloud for management, analytics, and durable storage.

» The ADLINK Data River*, offering translation between devices and applications to enable a vendor-neutral ecosystem to work seamlessly together.

» The ADLINK Edge software suite*, which builds a set of deployable applications to communicate with end-points, devices or applications and which publish and/or subscribe to data topics on the ADLINK Data River*.

Amazon SageMaker* + OpenVINO™ +

Training on AWS – Inference with Intel – Deployment Through ADLINK



Results

The solution optimized operations by improving pallet loading speed, accuracy, and efficiency. It has also increased employee productivity and improved worker safety, reduced need for unloading/loading, plus minimized theft and damage. The ADLINK AI at the Edge* solution closes the loop on the full cycle of machine learning model building—from design to deployment to improvement—by automating edge computing processes so that customers can focus on developing applications without advanced data science knowledge and machine learning models.

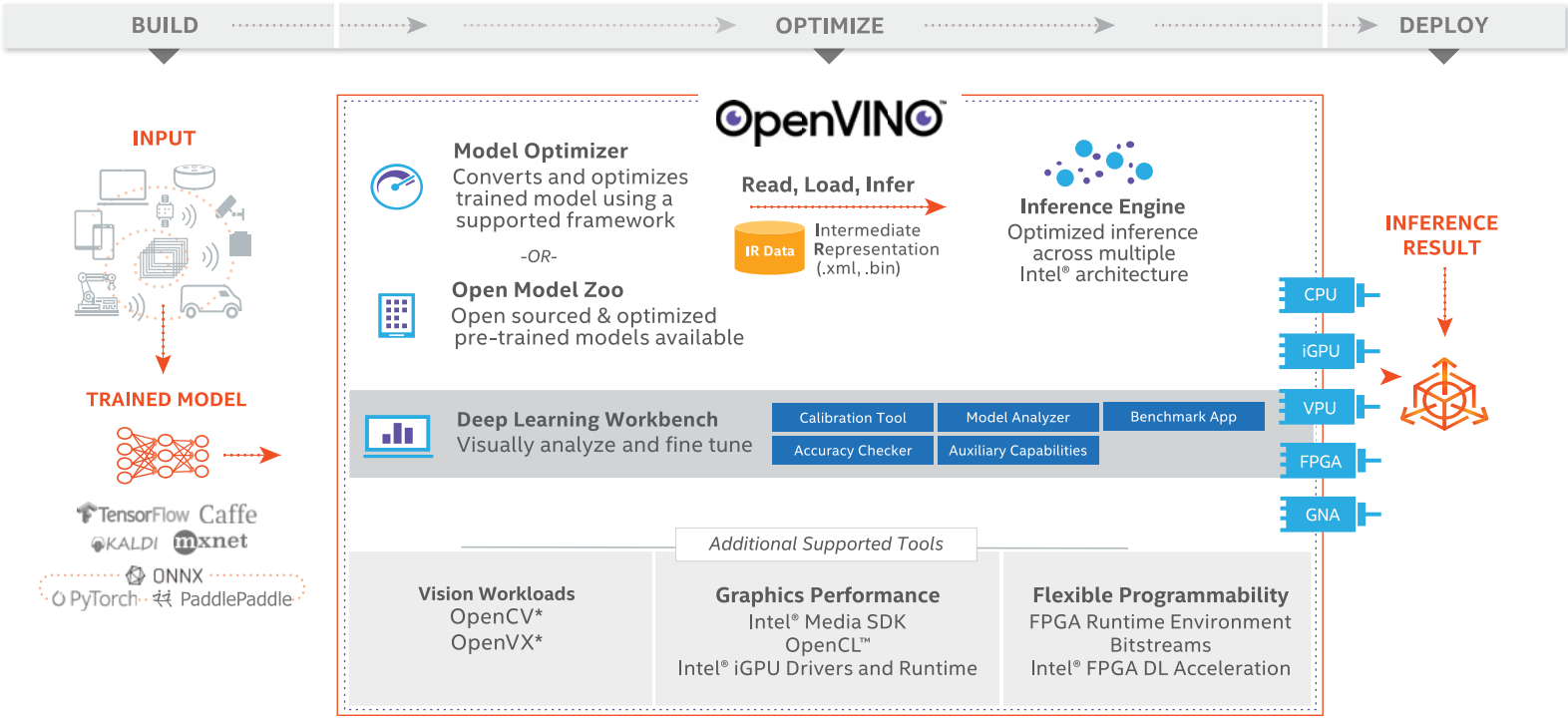
- 90% Improvement in pallet accuracy
- 41% Time-to-market improvement

Conclusion

Combined with our powerful partner ecosystem and our scalable, plug and play hardware, our ADLINK Edge* software makes deployment and integration faster, easier and more cost effective so our industrial customers can optimize operational efficiency and drive business value. ADLINK Edge* works seamlessly with AWS IoT Greengrass*, Amazon SageMaker* and Intel® Distribution of OpenVINO™ toolkit enabling users to train and test machine learning models weather conditions to create a new software-based approach.

Figure # | Under the Hood of Intel Distribution of OpenVINO toolkit

The Intel Distribution of OpenVINO toolkit is a free software kit that helps developers and data scientists speed up computer vision workloads and streamline deep learning deployments from the network edge to the cloud.



Solution Ingredients

Components from ADLINK:

- ADLINK Data River
- ADLINK Edge Software Suite
- NEON Industrial Smart Camera
- Intel® Vision Accelerator Design Product with Intel® Movidius™ Myriad™ X VPU
- GigE AI Frame Grabber

Amazon / Amazon Web Services

- Amazon Sagemaker*
- AWS IoT Greengrass*
- AWS Lambda*
- Amazon EC2*
- Amazon S3*

More info:

- Amazon EC2 + Intel® processors

Intel® OpenVINO

- Intel® Distribution of OpenVINO™ toolkit

Spotlight on ADLINK

ADLINK Edge* Machine Vision AI releases the potential of your vision-based operational data to enable intelligent decision-making at the edge informed by AI. Our end-to-end integrated system connects new and existing equipment, captures multiple image data streams and applies high performance processing power to enable machine learning and inferencing at the edge.

Learn More

- » Intel® AI Technologies
- » Intel® Distribution of OpenVINO™ toolkit
- » Intel® AI: In Production

About Intel® AI: In Production

Intel® AI: In Production is an ecosystem focused on reducing deployment complexities, promoting partner AI offerings, and increasing collaboration between its partners.

Find the solution that is right for your organization
Contact your Intel representative or visit:
www.intel.com/ai-in-production

ADLINK Leading EDGE COMPUTING

OpenVINO™

aws

intel

342145-001