

SUCCESS STORY

Revolutionizing Timber Measurement: AI-Driven Advancements

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Our cooperation with Aetina has been flawless and the technical support team is very helpful, competent and responsive.

— **Toke Nielsen**, Software and Computer Vision Developer - sScale lead

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From x86 to NVIDIA Jetson: Aetina Empowers Dralle for Next-Gen Timber Measurement

To unlock the power of AI and achieve the desired accuracy and efficiency in a compact solution, Dralle partnered with Aetina.

Aetina's edge computing platform, featuring M.2 and GigE expansion ports for seamless camera integration, provided a robust hardware foundation specifically designed for the Jetson module. Additionally, Aetina's expertise in Edge AI integration proved instrumental in enabling a smooth and quick migration (completed in just three months) from Dralle's existing industrial x86 system to a powerful Arm-based platform with NVIDIA Jetson at its core.



Aetina's AI Inference Platform - DeviceEdge powered by NVIDIA Jetson modules.

DRALLE



LogTracking since 2002

The Challenge: Outdated Systems and Modern AI Demands

Traditional manual timber stack measurement is a slow, manual, labor-intensive process, plagued by inaccuracy and safety risks for workers in **harsh weather**.

Dralle A/S, a leader in forestry digital technology, faced critical limitations with their legacy timber stack measurement system. Their initial system, an x86 platform with classic computer vision techniques (i.e., watershed algorithms and Hough transform), couldn't keep pace with modern AI demands.

The limitations were clear: **slow machine learning execution, insufficient processing power** for accurate log end detection, and a bulky size unsuitable for their camera box. These constraints ultimately rendered advanced AI and machine learning unusable on the existing platform, pushing Dralle towards a crucial turning point: the need for a solution capable of harnessing advanced AI and machine learning capabilities.

Leveraging NVIDIA Jetson's powerful GPU, Dralle significantly enhanced its sScale system thanks to:

- **Increased Efficiency:** Machine learning algorithms now detect up to 1000 unique log ends per frame in just 200 milliseconds, significantly reducing measurement time and manual intervention.
- **Enhanced Accuracy:** The switch from classic computer vision to machine learning delivers highly precise log end detection with minimal false positives.
- **Improved Safety:** Automated measurements eliminate the need for workers to leave the car, reducing safety risks.



Dralle's High-precision timber stack measuring system - sScale.

NVIDIA Jetson: The Catalyst for Success

NVIDIA Jetson, with its low power consumption and unified memory architecture, played a vital role in this transformation. The compatibility of Jetson with standard AI/ML libraries, and its provision for expansion ports, prompted the decisive transition from the initial x86 platform.

Aetina's Jetson-powered edge device delivered the key advantages that drove the switch:

- **High-Performance AI Processing:** NVIDIA Jetson's powerful GPU and Deep Learning Accelerator (DLA) enabled Dralle to deploy sophisticated machine learning models for real-time log end detection and measurement, which represents a significant leap forward compared to the limitations of classic computer vision techniques used previously.
- **Compact Design:** Jetson Orin's small form factor seamlessly integrated into Dralle's existing camera system, maintaining a compact and efficient overall solution.
- **Scalable Orin Architecture:** Jetson Orin's CPU, GPU, DLA, and Programmable Vision Accelerator (PVA) provide Dralle with a scalable platform for future AI advancements. This ensures their system can adapt and leverage even more complex AI models as their needs evolve.
- **Software Ecosystem:** Aetina facilitated the integration of Jetson with Dralle's infrastructure, aligning seamlessly with NVIDIA's software ecosystem, which includes Metropolis for intelligent video analytics, TAO for AI model training, DeepStream for real-time streaming analytics, MMJ for multi-modal joint reasoning, and Isaac ROS for robotics applications. This rich software ecosystem offers pre-built tools and optimizations specifically designed for running AI applications on NVIDIA hardware.

Aetina's Solution Benefit

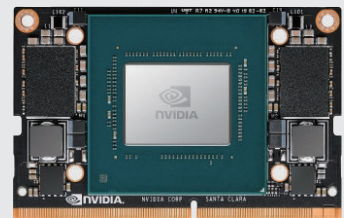
With Aetina's expertise in Edge AI computing solutions, Aetina helped Dralle to revolutionize timber measurement by:

- DeviceEdge - powerful but compact platforms
- High expansion capabilities for multiple peripherals
- Seamless camera device integration
- Comprehensive customization service
- Expert technical support

NVIDIA's Technologies In The Solution

NVIDIA Jetson brings not only powerful GPU but also cutting edge technologies to drive more efficient and accurate AI application. The technologies in this case include:

- NVIDIA Jetson module
- Deep Learning Accelerator (DLA)
- Programmable Vision Accelerator (PVA)
- Software ecosystem: NVIDIA Metropolis, TAO, DeepStream, MMJ, Isaac ROS



NVIDIA Jetson module

A Model Partnership for Future Innovation

Aetina's collaboration with Dralle exemplifies how they empower customers to achieve excellence in AI-driven industrial applications. Dralle's successful migration to the Jetson platform not only revolutionized their timber measurement process but also positioned them as leaders in their industry's digital transformation. With Aetina's continuous support, Dralle is well-equipped to explore scalable solutions utilizing more complex AI models, paving the way for continued advancements in AI-powered forestry solutions.

As Dralle continues to push boundaries of AI adoption in the forestry industry, Aetina and the whole NVIDIA Jetson ecosystem stand ready to be their trusted partners on this journey.



Dralle's high-precision 3D technology enables all-weather, all-season, day and night, off-grid timber measurement.

About Dralle A/S

Dralle A/S, based in Denmark's high-tech hub - DTU Science Park, is spearheading the forestry industry's digital transformation with ingenious solutions. Utilizing advanced technology and scientific expertise, Dralle supplies state-of-the-art photo-optic measurement tools and sophisticated supply chain solutions across Europe. Its innovative offerings, sScale and tScale, provide automated lumber stack and bulk material measurements - empowering customers to manage and trade their timber proficiently.

DRALLE 

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