avalue Technology Inc.

Embed AI Capabilities with Avalue solutions

About Avalue

As a global leader in embedded computing, Avalue plays a pivotal role in the development of artificial intelligence (AI). With more than two decades of experience in Industrial PC technology, we have leveraged our expertise to develop cutting-edge products to meet the diverse AI needs of customers.

Avalue offers a suite of edge computing products designed for those who require rapid response and a distributed computing structure. Leveraging significant computing power, we excel at accelerating AI models across multiple platforms, including Windows and Linux, while seamlessly supporting popular deep learning frameworks such as TensorFlow, ONNX, Caffe, and PyTorch.

In collaboration with global partners Intel and NVIDIA, we have developed meticulously built platforms with rugged design, flexible I/O and multiple interfaces. These platforms are rugged, industrial-grade solutions capable of delivering high performance and robust reliability in harsh environments. Avalue's commitment to advancing AI technology is evident in our dedication to creating adaptable solutions for a wide range of applications, from factory automation to smart retail, healthcare to intelligent transportation.

Avalue AI Architecture

Cloud

Platforms

- Intel Core series
- NVIDIA Jetson Series
- AI Accelerations

Software

- Object Recognition
- Medical AI
- Device Management
- Motion (EtherCAT)

Windows 10 IoT
Ubuntu OpenVINO

Internet

Edge Computing

Compact System <<< >>> High Performance System

LAN/WAN

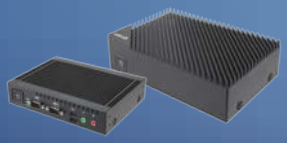
IOT Devices and Sensors

AI Solution Guide

more product details

Edge Computing Platform - Intel / NVIDIA

Compact System

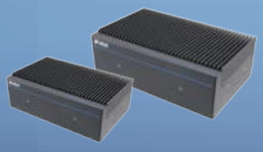


ACS10-TGU / NUC-TGU

Embedded System

EPC-TGU / EMS-TGL
ARC-1538

NVIDIA



AIB-NW01 / AIB-NIAO
AIB-NVAO

High Performance Computing

HPC

HPS-SRSU4A / HPS-SRSD4A
HPS-ERSU4A

GPU Expansion

MAB-T600 / MAB-T660

Accessories

Industrial Camera /
illumination / Controller

AI Solution Deployment

AI Solution

RENITY AIR

Renity AIR
Pre-built OS platforms
AI frameworks

Edge AI SDKs

FaceMe®

AI Accelerations

Hailo-8 M.2 module

I/O EXPANDABLE

WIDE WORKING TEMPERATURE

LOW NOISE DESIGN

COST-EFFECTIVE

LONGEVITY

PCIE EXPANSION

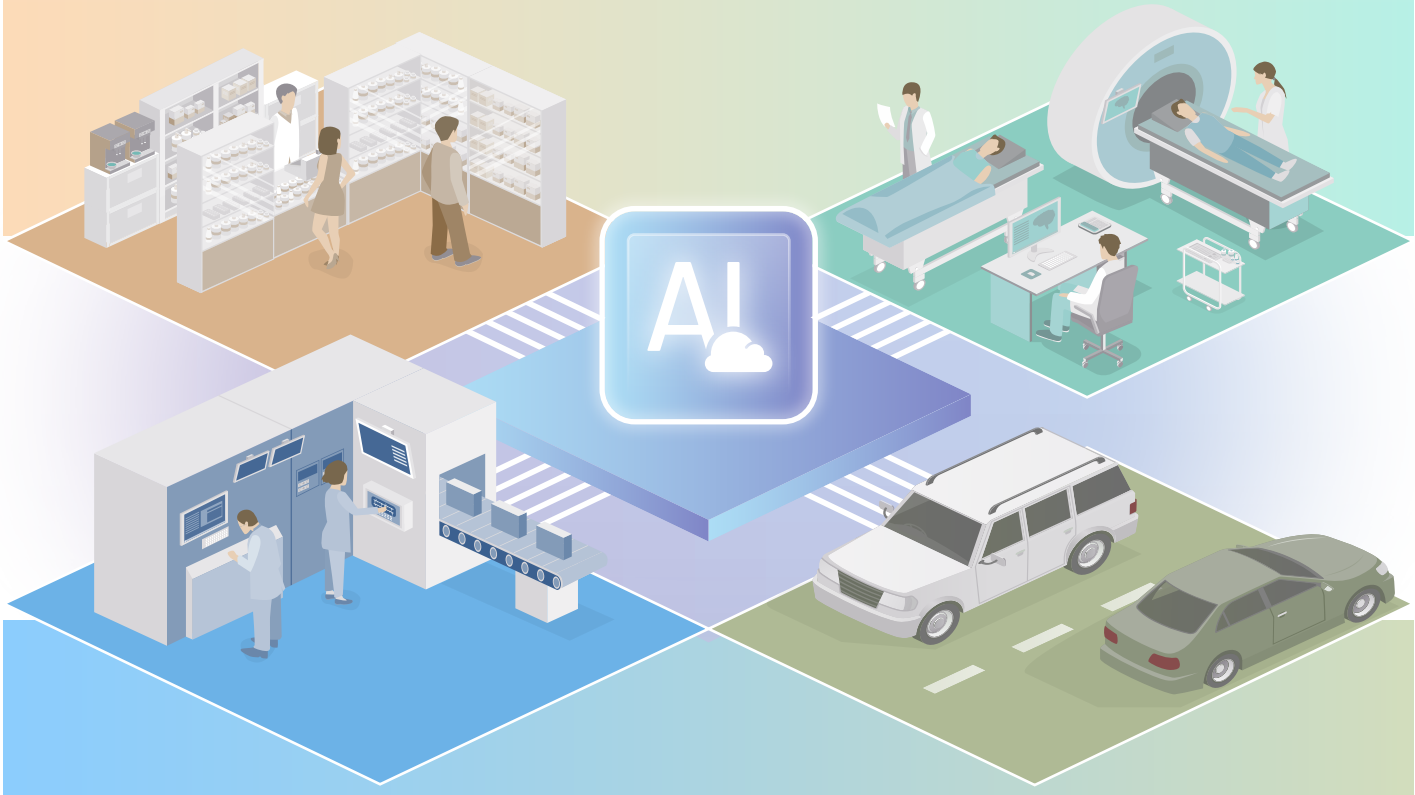
AI Solutions across Industries

Smart Retail

Avalue's AI-driven solutions enables businesses to optimize customer experiences, personalize marketing strategies, and streamline operational processes. From intelligent inventory management to object recognition systems, our products empower retailers to stay ahead in a dynamic market.

Intelligent Healthcare

In the realm of healthcare, our products support healthcare professionals in diagnostics, patient monitoring, and data analysis, ultimately improving the quality of care and facilitating medical research through the integration of AI algorithms.



Optimized Manufacturing

Avalue's solutions facilitate predictive maintenance, quality control, and process optimization, ensuring that manufacturers can achieve higher levels of efficiency, reduce downtime, and enhance overall production quality.

Connected Transportation

In the field of connected transportation, Avalue contribute to the development of intelligent transportation systems, fostering innovations in autonomous vehicles, traffic management, and logistics optimization, and shaping the future of mobility.

Smart Retail

Simplify checkout process with Object Recognition Revolution for Bakery Shop

In retail market, object recognition is revolutionizing efficiency and customer experience. Using advanced AI edge computing and deep learning, bakeries achieve real-time product recognition, enhancing inventory management and reducing manual efforts and costs.

This boosts staff productivity, minimizes errors, shortens wait times, and elevates overall satisfaction. The seamless integration of AI recognition and POS checkout empowers employees to grasp sales insights, facilitating agile production and procurement adjustments. This strategic use of data minimizes inventory issues effectively.

Avalue provides AIR Solution,which training process is user-friendly, requiring three photos of recognized items for cloud-based training, making AI-operated businesses effortless without specialized knowledge. AI recognition isn't just a technological leap but also the future of bakery operations, offering unprecedented advantages in efficiency, cost reduction, and customer experience.

Leverage the Avalue AIR solution for Retail to achieve:

- Simplify checkout process
- Reduce training costs
- Enhance accuracy
- Increase efficiency

RECOMMEND PRODUCTS:


AIR-Lite


AIR Flexible-21/15


AIR All-in-One


AIR A300

Intelligent Healthcare

Elevating the health and life science domain through the high-performance computing

High-Performance Computing (HPC) plays a crucial role in revolutionizing healthcare and life sciences with AI. In these fields, massive amounts of data, ranging from genomic information to medical images, demand fast processing for timely insights. HPC enables the swift analysis of complex biological data, facilitating tasks such as medical imaging analysis, genomic sequencing, drug discovery, and personalized medicine. Whether identifying patterns associated with diseases or potential drug targets, or expediting the genomic sequencing process, AI is now welcomed to improve efficiency and productivity in healthcare. By leveraging deep learning models for automated image interpretation and disease characteristic recognition, the AI algorithm analyzes X-rays, MRIs, and CT scans, facilitating swift and accurate diagnoses. Furthermore, through the analysis of a vast amount of genomic data, healthcare professionals can understand the intricate relationships between genes and diseases, thereby facilitating the discovery of innovative treatment methods.

In the realm of personalized medicine, HPC excels in swiftly analyzing patient-specific data encompassing genetic information, medical history, and lifestyle factors. AI algorithms then leverage this comprehensive data to formulate personalized treatment plans. Beyond that, the robust computational power of HPC facilitates advanced simulations of biological processes, accelerating the analysis of simulation outputs. This synergy, powered by AI and HPC, expedites the development of precise treatments, and the iconic ultra-fast computational power and the reliability and scalability of HPC make it the optimal choice for tailoring AI to deliver the most effective solutions.

Leverage the Avalue HPC solution for healthcare to achieve:

- Optimized performance
- Highlighted reliability
- Tailored operations
- Ready to deploy

RECOMMEND PRODUCTS:

HPM-ERSDE

HPM-ERSUA

Optimized Manufacturing

Implementing AOI for Enhanced Quality Assurance through high performance computing

Automatic optical inspection (AOI) is widely used in electronics, semiconductor and optical manufacturing. Traditional AOI relies on optical matching, storing image libraries for comparison, and replacing human vision with optical lenses. However, AOI is prone to misjudgment due to inadequate parameter definition. To avoid this, sensitivity and defaults are increased, leading to over-detection and requiring manual re-inspection.

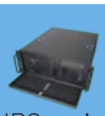
AI defect learning addresses the limitations of AOI. Trained in image recognition, AI detects defects based on features. By integrating AI with AOI, most defects can be detected initially, with AI handling the hard-to-detect defects. AI uses the "rule of thumb" in image recognition to improve the recognition and detection rates of AOI.

To boost the performance of AI AOI, it is crucial to upgrade the hardware to a high-performance computing system. This improves detection rates, reduces false negatives and speeds up inspections. High-performance computing enables AI AOI to quickly adapt to changing production requirements, increasing overall system flexibility and efficiency. Such upgrades drive the manufacturing industry toward intelligent advancements that ensure more accurate and reliable production processes.

Leverage the Avalue HPC solution for Manufacturing to achieve:

- Improve detection rates
- Optimize production
- Ensure quality
- Upgrade system performance

RECOMMEND PRODUCTS:



HPC series

AIB-NW01

Connected Transportation

Reduce maintenance costs with AI image recognition and prediction for the most convenient service and accurate transport

Intelligent Transportation System is divided into two major road and vehicle-oriented, road traffic applications through AI recognition technology to monitor road conditions and traffic flow, real-time tracking, classification and collection of road information, and then analyze and predict the big data to achieve the goal of effective control and improve the overall efficiency of traffic flow operation; vehicle includes license plate recognition, driving behavior detection, vehicle status detection and unmanned work vehicles.

The AI recognition technology not only makes the overall traffic operation more efficient, but also makes the best use of the large amount of data collected in the database, which can be used to provide faster and more accurate traffic services after simulation training, and can also be used for sustainable system maintenance, route flights, road condition forecast and delay analysis, etc., which significantly reduces manpower and administrative and maintenance costs, and builds a precise and intelligent transport solution.

Intelligent Transportation Plus is the optimal application of AI technology that relies on a massive cloud computing system to maximize the value of the Intelligent Transportation System.

Leverage the Avalue BOX PC solution for Transportation to achieve:

- Reduce maintenance costs
- Increase accuracy
- Improve congestion
- Real-time Tracking

RECOMMEND PRODUCTS:


HPC series


VMS-EHLR (Railway Box PC)


VMS-ADPS (In-Vehicle Box PC)


EMS-TGL-Marine (Marine Box PC)

RPC-15WNX (Railway Panel PC)


ARC-1037 Rugged Panel PC