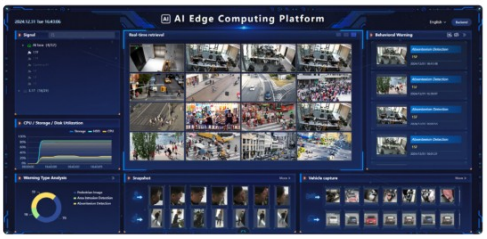
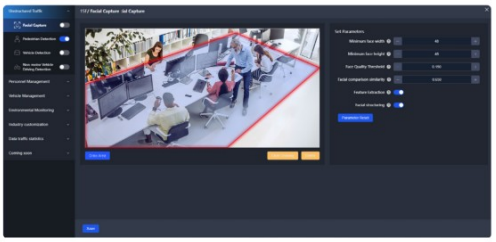
AVCIT AI Box

AI Edge Computing Node for CCTV System





AVCiT AI Box is developed for real-time video structured analysis with optional algorithms, which is able to transit regular IP Camera to be AI Camera. The AI Box is all-in-one design built-in the back-end computing engine and front-end GUI, which is able to be accessed and managed from browser. The detected images/videos could be saved into the ROM of AI Box or pushed to 3rd party platform in real time.

This AI edge computing node has multiple algorithms built in, and supports multi channels video structured analysis and multiple behavior analysis algorithms. It can meet the application needs of security, safety supervision, transportation, industrial manufacturing and other scenarios, and has excellent performance and intelligent analysis capabilities.

Highlight

✓ Edge Computing with Rich Interfaces

Integrate high-performance ARM with high-utilization AI accelerators; Low latency at high throughput rate, more suitable for real-time applications; Supports multiple protocols (RTSP, RTMP, GB28181, etc.) docking; Provides API interface and third-party platform docking

✓ Algorithms Accurate and Customizable

Support person/vehicle/object recognition and multi-channels video structured analysis; Provide customized algorithms and deployment solutions to meet the needs of various scenarios.

✓ Rapid Deployment, Plug-and-play

Flexible and lightweight, easy to deploy; Suitable for various types of scenarios

✓ Cross-camera recognition

Integrate independent and dispersed CCTV video information systems in different regions for centralized analysis and management

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Technical Descriptions

- ✓ Through IP network access to front-end video equipment or systems, the video information of various independent and decentralized systems such as analog, digital, standard definition, and high definition can be centrally collected, managed, and controlled in a unified standard. DVR, NVR, IPCAM, video system platform, etc. can be accessed and managed at the same time. Support docking with security platform, and can directly obtain streams from the security platform.
- ✓ Support video prepossessing function, and extract key information for storage and forwarding. A single node supports simultaneous analysis of 16 channels of 1080 P30 video.
- ✓ Support standard H.264 and H.265 encoding format video access and distribution.
- ✓ The video data streams of different manufacturers connected to the gateway can be forwarded to the control center, client, Web browsing, etc. through network unicast/multicast to achieve large-scale concurrent access.
- ✓ The protocol of the accessed standard or non-standard equipment can be converted into the GB/T28181 standard and RTMP standard protocol output to meet the call and networking of the third-party information management system.
- ✓ Support the access and cascading of multiple heterogeneous platforms at the same time, support the connection with the upper platform with the GB/T28181 standard and RTMP standard, and access the lower platform with the private SDK protocol, HTTP, GB/T28181 standard, RTSP standard, and RTMP standard.
- ✓ Centralized video management with unified standards, centralized management, monitoring and control of various independent and decentralized video information systems, and simultaneous access and management of DVR, NVR, IPCAM, video platform, etc.
- ✓ Video monitoring and detection analysis can be performed, facial features in pictures and video sources can be extracted and analyzed, and multi-face detection and capture, facial attribute analysis (gender, age, mask, glasses), face recognition, crowd flow statistics, face comparison retrieval, face library management, etc. Support multi-target trajectory tracking, wandering detection, and abnormal crowd gathering.
- ✓ Detect and analyze the video images, extract various information about the vehicles in the video, such as the vehicle model, license plate, color, brand, etc., and also perform traffic statistics, illegal parking detection, park speed detection, vehicle operation trajectory analysis, foothold analysis, and inspection and control. At the same time, it supports the detection of wearing helmets when riding electric bikes, the detection of electric bikes prohibited from entering elevators, and the identification of illegal parking of electric bikes.
- ✓ Based on high-computing processors, the computing power is 70T, with high precision and high stability.
- ✓ Support the provision of edge APIs and center APIs, open the built-in IoT, AI, cloud native and other capabilities of the product to other services or third-party applications, support the data generated by edge applications to be quickly forwarded and routed to other cloud services or third-party applications, support the mounting of Ds Link components and direct connection to distributed audio and video systems, and realize the early warning screen/data, and the corresponding video stream can be put on the designated location for large-screen pop-up alarms, such as LED large screens for pop-up alarms.

Technical Specification

Hardware Parameters			
Model#	DSAI-ECN-L08PRO	DSAI-ECN-L16PRO	DS.AI-ECN-L32PRO
Photo			

Channel (Video Decoding Capability)	8 CH 1920x1080P@30 or 2 CH 3840x2160P@30	16 CH 1920x1080P@30 or 4 CH 3840x2160P@30	32 CH 1920x1080P@30 or 8 CH 3840x2160P@30
CPU	Octa-core Cortex A55, up to 1.7GHz	Octa-core Cortex A55, up to 1.7GHz	Octa-core Cortex A55, up to 1.7GHz
RAM	LPDDR4X Default configuration 8GB	LPDDR4X Default configuration 8GB	LPDDR4X Default configuration 8GB
Storage	Built-in eMMC 4GB + 128GB SSD	Built-in eMMC 4GB + 128GB SSD	Built-in eMMC 4GB + 128GB SSD
Interfaces	Gigabit Ethernet ports× 2 USB 3.0× 1 USB 2.0× 4 HDMI OUT× 1 RS485× 1	Gigabit Ethernet ports× 2 USB 3.0× 1 USB 2.0× 4 HDMI OUT× 1 RS485× 1	Gigabit Ethernet ports× 2 USB 3.0× 1 USB 2.0× 4 HDMI OUT× 1 RS485× 1
Development Support	Supports deep learning frameworks such as TensorFlow, Caffe, PyTorch, and Paddle	Supports deep learning frameworks such as TensorFlow, Caffe, PyTorch, and Paddle	Supports deep learning frameworks such as TensorFlow, Caffe, PyTorch, and Paddle
Operating System	buildroot	buildroot	buildroot
Operation Temperature	-30~85℃	-30~85℃	-30~85℃
Humidity	10%~80% (working environment), 10%~90% (storage environment)	10%~80% (working environment), 10%~90% (storage environment)	10%~80% (working environment), 10%~90% (storage environment)
Power	30 Watt	30 Watt	30 Watt
PSU	DC 12V 2.6A	DC 12V 2.6A	DC 12V 2.6A
Dimension	220x140x38mm	220x140x38mm	220x140x38mm
Net Weight	1.85kg/node	1.85kg/node	1.85kg/node

Solution Schematic