NABLA WORKS

SenseNebula AIE Product Inroduction

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Software Version: V2.4.0

AIと人間が共存する未来を創る

Designing a Future AI and Human Collaborate

ABOUT US

Nabla Works is a leading AI solutions provider dedicated to creating a better AI-driven future through innovation. Upholding a vision of connecting the online and offline worlds, promoting sustainable productivity growth, and seamless interactive experiences, Nabla Works advances the forefront of AI research applications. We develop scalable and affordable AI software platforms to benefit businesses, individuals, and society, and attract like-minded partners to shape the future together.

Rooted in the Japanese market, we invest in applied and cutting-edge research solutions, enabling us to offer and continually enhance industry-leading full-stack AI application capabilities. These cover perception intelligence, decision intelligence, AI content generation and enhancement, as well as full-stack solutions for AI chips, sensors, and computing infrastructure. Our world-leading proprietary AI technology in the Japanese market allows us to develop more efficient AI software platforms suitable for a wide range of applications.

Currently, our technologies are trusted by customers and partners across various industries, including smart transportation, smart security, and smart retail.

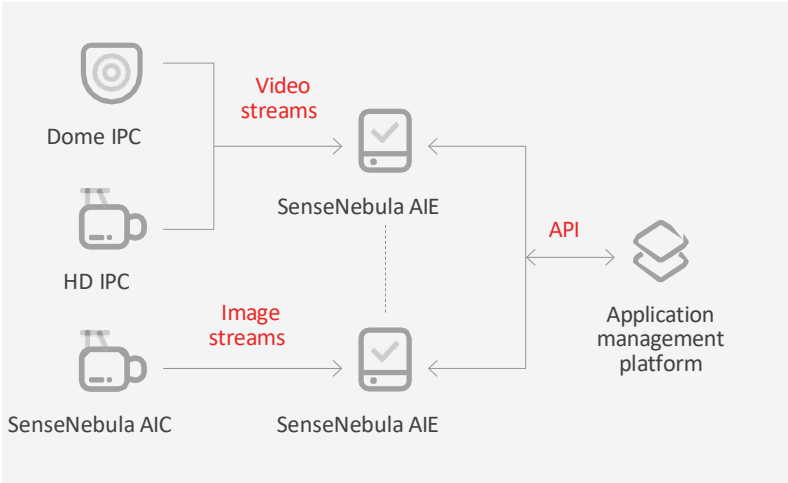
Our technology has achieved widespread application success in markets such as Japan, Hong Kong, Mainland China, Taiwan, Macau, Singapore, Saudi Arabia, the UAE, Malaysia, and South Korea. For more information, please visit Nabla Works' website or email us at info@nablaworks.co.jp.

PRODUCT INTRODUCTION

SenseNebula-AIE LT-A Series is an embedded product integrating software and hardware based on world-class algorithms and an intermediate technology platform. SenseNebula-AIE supports access from multiple video collection devices such as IP cameras, smart cameras, and web cameras. It supports the analysis and flexible scheduling of various algorithms, including facial verification, pedestrian analysis, attribute analysis, vehicle type recognition, and liveness detection. It features data aggregation, autonomous analysis, and data push capabilities, providing industry solution providers, integrators, and agents with intelligent products and solutions applicable to diverse scenarios.

USAGE SCENARIOS

Banking Outlets



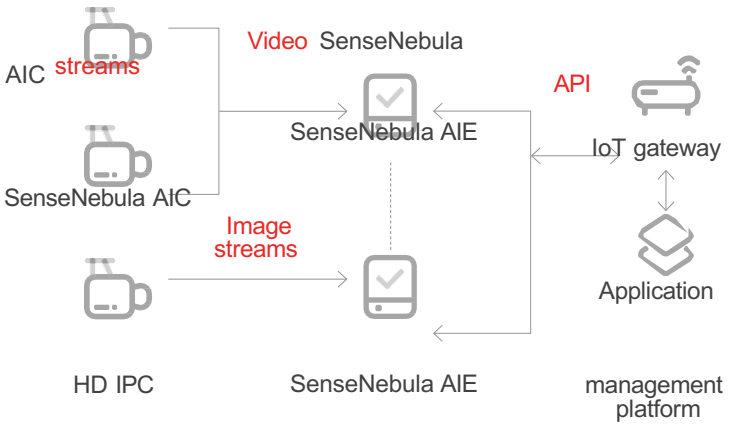
Application Scenario

Security protection and personnel management at bank branches

Functions

- Special personnel identification
- VIP identification, visitor recording, and customer flow statistics.
- Stranger clustering, image retrieval, frequency analysis and wandering alarm

Smart Community



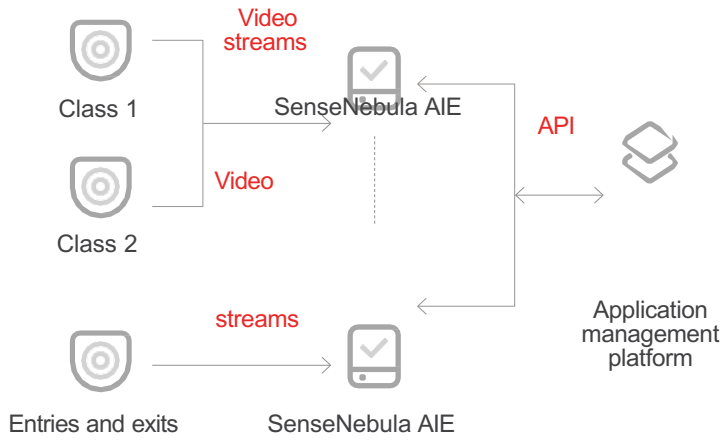
Application Scenario

Security protection for residential areas, personnel and vehicle management at entries and exits

Functions

- Smart access for residents and tenants
- Special personnel and strangers identification
- Image retrieval, frequency analysis, wandering alarm and alarm data analysis
- Vehicle license plate recognition, occupying-road vehicle analysis
- Non-motor Vehicle recognition, occupying-road non-motor vehicle analysis

Smart Campus



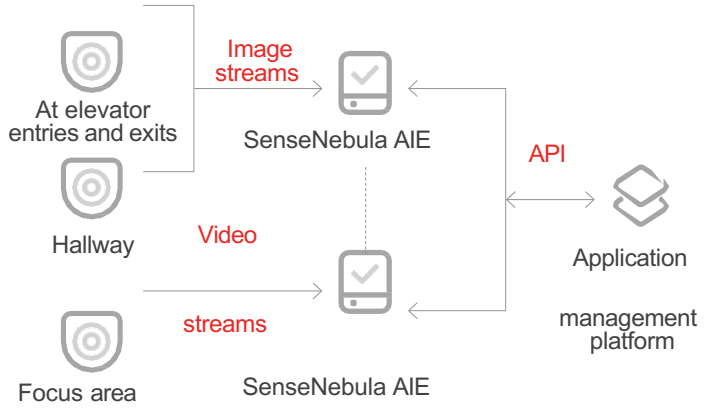
Application Scenario

- Attendance check and security protection at campuses and in classes
- Vehicle management at entries and exits
- Non-motor vehicle managements

Functions

- Access by dome FHD IP cameras, along with an identity verification algorithm optimized for the class environment to ensure accuracy
- Automatic attendance in classes and exception alarm
- Stranger clustering, image retrieval, frequency analysis and wandering alarm
- Vehicle license plate recognition

Smart Building



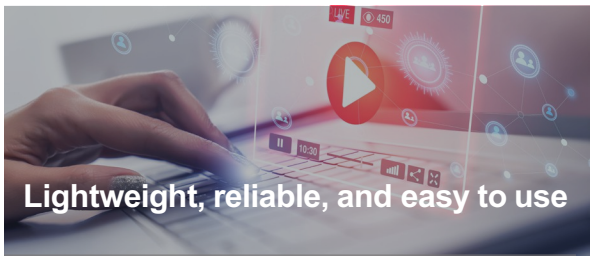
Application Scenario

Security protection for buildings and venues

Functions

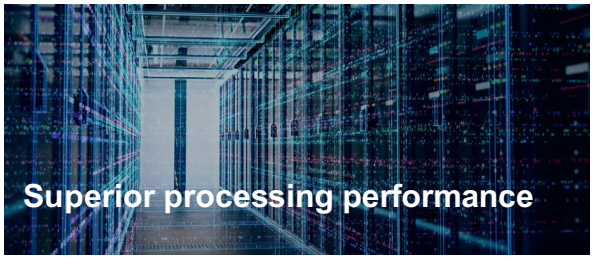
- Special personnel identification
- Stranger identification and stranger clustering
- Image retrieval, frequency analysis, wandering alarm and alarm data analysis

PRODUCT HIGHLIGHTS



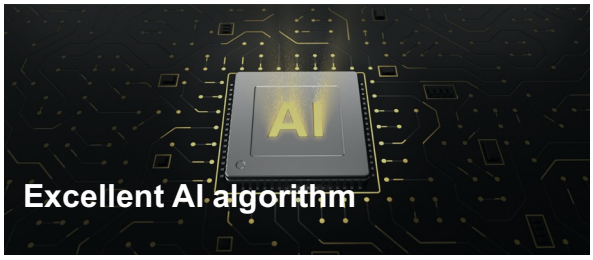
- Lightweight design, low power consumption, and easy installation, no need for a specialized equipment room
- Industrial-grade, long-term stable operation at high and low temperatures
- Rich web-based functions to meet requirement of AI application scenarios quickly
- POE or power supply, flexible, and easy to use

- Access by the IP cameras and smart cameras
- Secondary development of access by capture devices



- Deep learning algorithms based on edge computing GPU
- Single device supports up to 16 video streams or up to 32 image streams
- Support for key personnel or allowlist databases up to of 300,000 entries

- RESTful APIs facilitate secondary development by third parties
- Diverse interface functions support multi-scenario applications
- Support multiple data push methods such as HTTP, HTTPS, WebSocket



- Supports pedestrian, vehicle, non-motor vehicle attributes analysis
- Supports free scheduling for multiple algorithms including identity verification, pedestrian analysis, vehicle vefication, non-motor vehicle analyis
- Intelligent algorithms with a high detection rate, high accuracy, and a low false positive rate
- Enhanced multi-scenario adaptability with improved verification range, verification angle, and verification quantity

- Hardware design & data storage with encryption feature
- Web-based Https security access, API call and secure data push through Https
- Customizable storage period, automatically remind and deleted when it expires
- Display of sensitive information requires secondary verification for viewing, editing and exporting

SPECIFICATIONS

Basic Specifications

Product Series	Product Name	Product Model	Description
SenseNebula AIE	LT-A	ST-SNMA-SX04MV	Standard edition

Item	Description
Dimensions	169 mm x 103.5 mm x 33.8 mm
Weight	0.85 KG
Power consumption	15W
MTBF	>100,000 hrs

Performance Specifications

Item	Description
Respirator verification rate	>99%
Identity verification accurate with respirator	>90%
Verification rate	≥99% (applicable to video streams)
Identity verification rate	≥99%
False recognition rate	<1%
Verification angle	Yaw angle : -60° to +60° Pitch angle : -30°to +30° Roll angle : -45° to +45°
Identity verification angle	Yaw angle : -30° to +30° Pitch angle : -30° to +30° Roll angle : -30° to +30°
Capture size	Image size > 30 x 30 pixels
Verification size	Image size> 30 x 30 pixels
Processing performance	16 persons/s
Access capability	M4s:8 channels of video streams or 16 channels of image streams M8s:16 channels of video streams or 32 channels of image streams
Encryption mode	Software and hardware encryption
Total capacity of portrait databases	300,000 stored images
Number of portrait databases	50
Capacity of the live alert deployment database	300,000
Image size of the portrait database	<100 KB(recommended, and the size of a single portrait couldn't exceed 5MB)
Image format of the portrait database	JPG JPEG PNG BMP TIF
Capture storage capacity	8GB
Stranger list	4GB

System Specifications

Item	Description
Power supply	Method 1: 100-240V AC, 12V/3.0A DC, input power adapter Method 2：POE
CPU	ARM
GPU	Edge Computing GPU
Memory	8GB DDR4
Storage	64GB eMMC
Network port	Gbit Ethernet x 2 (including POE x 1)
Ports	COM x 1 USB x 2 HDMI x 1 SD x 1 RESET x 1
Network protocol	TCP/IP, HTTP, DNS, and DHCP
Operating system	Linux
SenseNebula AIE software	For the latest software, please refer to the official release

Environmental Specifications

Item	Value	Description
Operating temperature	-10℃~50℃	SenseNebula AIE may operate abnormally out of this range. Do not mount SenseNebula AIE above a heat source.
Storage temperature	-20℃~60℃	—
Operating humidity	5%~95% RH	Do not expose SenseNebula AIE to rain or dampness. Water ingress or moisture may damage its internal components and result in malfunction.
Ventilation	—	Mount SenseNebula AIE in a well-ventilated place and take dustproofing measures.
Installation method	—	Place SenseNebula AIE horizontally or mount it on a wall. We recommend that M3 × 8 mm recessed pan head screws be used to secure SenseNebula AIE on a wall.

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