Application Story

AI@Edge: Powering Solutions for Safer Communities

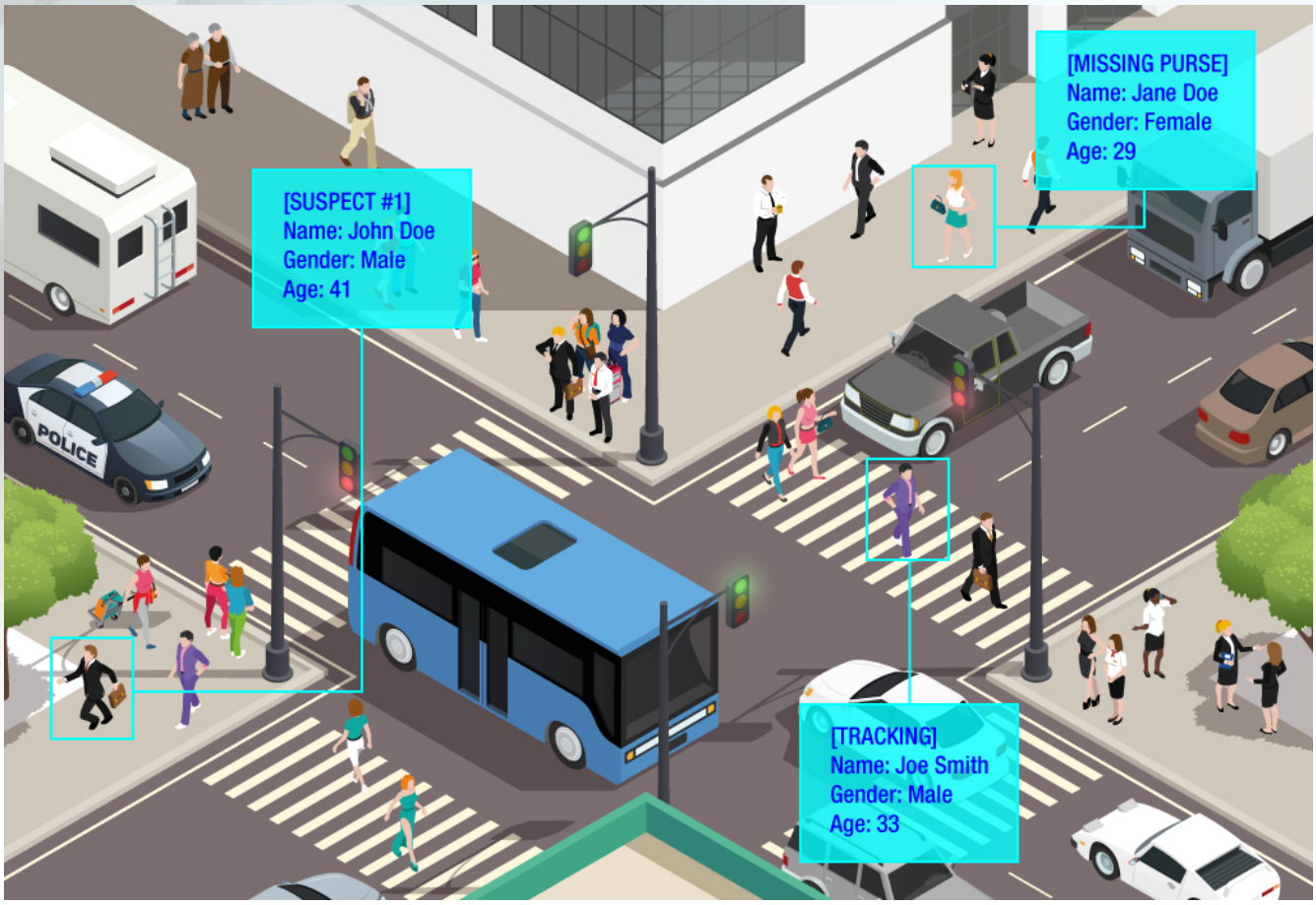
Industry: Community Management
Product: BOXER-8120AI

Introduction

Cities and communities around the world are turning in large numbers towards using AI edge computing applications as a solution to many of their needs. From Smart City and Smart Community initiatives to Intelligent Building management and Smart Security, there are many AI edge-based applications to help improve the quality of life and wellbeing of people who live in these cities, communities and buildings.

In recent years, China has seen growing success in deploying facial recognition for investigating organized crime, as well as in the fight against terrorism. Facial recognition can help easily identify and track persons of interest, helping to quickly solve crimes and improving quality of life for residents in these communities.

Thanks to the success of these programs, the market for AI edge computing for public safety has grown rapidly in China. One company is leading the development and deployment of AI Edge and Smart City solutions in Shanghai and beyond. Coupling facial recognition with behavioral analysis, their system can aid in virtual fence applications, track persons of interest, as well as help locate missing or lost items. With increased security and safety, residents can enjoy peace of mind in their communities.



Challenges

To provide an effective solution, the company had several key requirements and challenges which needed to be addressed. With a growing market for AI enabled systems in China, the company needed a hardware solution that would let them stand out from the pack and stay a step ahead of their competition, as well as to unlock the full potential of their AI edge software.

NVIDIA System

The company has experience working with NVIDIA systems. Switching to an alternative solution would cause unnecessary delays, putting deployment of their system behind their competitors. However, they also needed a custom-built BIOS configuration to handle the demands of their AI software.

Rugged Embedded System

To allow effective and flexible deployment of the company's AI solution, the system needs to be deployed in a range of embedded configurations for cities, communities and buildings. With some systems to be deployed in remote locations, unreliable systems and frequent failures can drive up maintenance costs.

Proprietary Software Protection

As a large developer of AI technology, the company needed a system that helped secure their software. To ensure their proprietary software was safe from attack, the company required specialized encryption protection be put in place to prevent the software from being copied or stolen.

Competitive Edge

With many other competitors also vying for important contracts throughout China, the market to provide effective AI systems is very crowded. The company needed a system that could be deployed quickly to put them a step ahead of the competition.

Solution

The company chose AAEON to provide their hardware solution, thanks to AAEON's reputation in providing AI Edge solutions which are reliable and meet the needs of our customers quickly and effectively. Working closely with the company, the BOXER-8120AI with NVIDIA Jetson TX2 was selected as the best solution for the company's AI software.

Powered by Nvidia Jetson TX2

With the company's prior experience working with NVIDIA and AAEON systems, the BOXER-8120AI offers not only powerful AI Edge computing, but a system which could be quickly configured and customized for their needs. This way the company could minimize downtime in preparing their software for the system, and time-to-market was greatly reduced, allowing the company to stay ahead of their competitors.

Reliable, Rugged Design

On AAEON is an industry leader in rugged systems, and the BOXER-8120AI is no exception. With a fan-less design, the BOXER-8120AI can operate in a range of conditions and temperatures from -20°C to 50°C. The company's experience with AAEON meant they knew the system is reliable and stable, reducing maintenance requirements to keep the system running.

Software Security

AAEON works with our clients to provide embedded systems which help keep their software safe and prevent illicit copying and theft of intellectual property. The BOXER-8120AI comes standard with several key protections in place. Working together with the company, we configured the BOXER-8120AI with a high-end encryption protection system to address their specific needs and concerns.

OEM/ODM Services

AAEON provided support through our OEM/ODM Services, from adding an additional CANBus port to providing custom software protections. Working closely with the company, AAEON helped test and refine the custom Linux build the company chose to use. Furthermore, AAEON customized the BIOS, eliminating unneeded drivers and hardware controllers, making the system efficient and lean. This improved end-user experience and also helped accelerate testing times and reduce time to market.

Impact

Thanks to the combination of AAEON services and the BOXER-8120AI hardware solution, the company was able to bring their AI edge software to market in a complete package more quickly than their competitors, giving them an edge to win contracts and purchases across China. By providing a system which is reliable, durable, and rugged, maintenance costs are greatly reduced, saving communities and agencies considerable money in upkeep for their security and monitoring needs.

With the deployment of the company's AI Edge system, these cities and communities can expand their efforts in fighting organized crime, preventing terrorism, and maintaining piece of mind and safety for residents. Whether in the middle of a big city like Shanghai or distant communities, residents are able to enjoy a higher quality of life thanks to the company's system and the BOXER-8120AI.

BOXER-8120AI Embedded AI System

The BOXER-8120AI is designed for edge AI computing. The BOXER-8120AI is equipped with the NVIDIA Jetson TX2, supporting 256 CUDA cores and AI frameworks including Tensorflow, Caffe2, and MXNet. Users can also install their own AI inference software on the BOXER-8120AI.

The BOXER-8120AI has four Intel LAN (i211) ports to support IP cameras, and it also boasts a series of rugged design features such as anti-dust specifications, a wide operating temperature range, a wide range power input, and an aluminum chassis. The BOXER-8120AI's compact, cost-effective design and powerful processing abilities mean you'll be able to deploy your AI platform anywhere.

AAEON Manufacturer Services provide configuration, customization and OEM/ODM support to ensure your AI application can be delivered quickly and effectively. Whether it's changing an I/O port, or reconfiguring the BIOS, AAEON is a committed hardware solutions partner, and ensures the specific needs of your project are met.

About AAEON

Established in 1992, AAEON has become one of the leading designers and manufacturers of advanced industrial and embedded computing platforms. Committed to innovative engineering, AAEON provides Industry 4.0 integrated solutions, hardware and intelligent automated services for premier OEM/ODMs and system integrators worldwide, as well as IoT solution platforms that seamlessly consolidate virtual and physical networks. Reliable and high-quality computing platforms include industrial motherboards and systems, industrial displays, rugged tablets, PC/104, PICMG and COM modules, embedded SBCs, embedded controllers, network appliances and related accessories. AAEON also offers customized end-to-end services from initial product conceptualization and product development through to volume manufacturing and after-sales service programs. It is also committed to continuously redefining and harmonizing the management and development processes of the industry.

With its constant pursuit of innovation and excellence, AAEON became a member of the ASUS group in 2011, enabling the company to further strengthen its leadership, access advanced technology from ASUS, and leverage resources from within the group. AAEON is poised to offer more diversified embedded products and solutions at higher quality standards to meet world-class design and manufacturing demands in the years to come.

AAEON is an Associate member of the Intel® Internet of Things Solutions Alliance.

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