

ScanViS Face-In-One

City Wide Public Security Facial Recognition System

Precise face recognition algorithm

Large database 1 billion

1 million faces watchlist

Product Description

ScanViS Face-In-One system provides intelligent security solutions for cities with its world-leading precise face recognition algorithm, responding to demands in complex scenarios, supporting full ethnics recognition and dealing with compute-intensive tasks.

Face-In-One server with either 4 or 8 GPUs card can connect to 50 or 100 IP cameras / video stream respectively and support face capture camera also. Each Face-In-One server processes 80 or 160 QPS (Query Per Second), that is 150 and 300 face capture cameras respectively, assuming 0.53 QPS per camera in typical scenario.

This server supports extremely huge database of 1 billion faces and allows 1 million faces in repository or watchlist. It allows watchlist surveillance to identify any suspects in the watchlist and sends push alerts whenever persons-of-interest on the watchlist encroach upon the monitoring areas. At the same time, its high accuracy with 1 in 100 billion mismatching to increase hit rate of security force operation. Face-In-One is a perfect solution for city wide or even national public safety facial recognition system with the following facial recognition features:

- ✓ **1:1 Comparison:** Comparison of two target photos for similarity scores.
- ✓ **1:N Search:** Instant retrieval of a facial image against immense sets of image database.
- ✓ **n:N Comparison:** Cross-database comparison for images with high similarity scores.
- ✓ **Real-Time Surveillance:** Push alerts send upon detection of persons-of-interest in predetermined image database when they appear within the area of operation.

Product Highlights

Fast Retrieval

Static facial image comparison against the 1-billion-image database with similarity scores returned in seconds.

Rel-Time Profiling

Archiving 100 million passers-by facial images per day, each within seconds.

Flexible Architecture

Flexible distributed computing architecture designed to support cross-platform portrait sharing and refined user rights management.

High Accuracy

The false alarm rate against a database of half million images is as good as 1 in 100 billion making for ultimate security.

Full Ethnic Supporting

Full ethnic recognition regardless of various facial expressions, glasses, makeup, beard, hats, etc.

High Scalability

Cluster cascading across administrative areas.

Application

Border Protection: Intelligent management of critical border control terminals, building a multi-dimension protection barrier.

Security Set-up Points: Building up intelligent security checkpoints to improve the city security index.

Smart Community: Using intelligent technologies to create a safe living environment.

Safe City: Supporting cluster cascading across various administrative areas, effectively safeguarding the city.

Technical Specifications

| Performance | Face-In-One (4 GPU cards) | Face-In-One (8 GPU cards) |
|--|--|---------------------------|
| # IP camera (video stream) support | 50 | 100 |
| Query Per Second (image stream QPS) | 80 | 160 |
| # Face capture camera support | 150 | 300 |
| Input video stream | 1080p (1920 x 1080) 25fps | |
| Minimum size of detected face | 60 x 60 pixels | |
| Database capacity | 1,000,000,000 faces | |
| Face comparison | 1:1 Identity Verification 1:N comparison (support repository size of 1,000,000 faces) n:N face comparison of 2 databases | |
| Face capture ratio | 99% | |
| Accuracy / matching ratio | 97% @ 0.00001% False Match Ratio 94% @ 0.0000001% False Match Ratio | |
| Maximum faces recognized per frame | 20 | |
| Real time surveillance and alarm delay | 2-3s | |
| Storage and retrieval of passers-by | 15 days or more | |
| Search passers-by with images | Yes | |
| Hardware Specifications* | | |
| CPU | Intel E5 2680 V4*2 / Xeon6126*2 / Xeon6130*2 | |
| GPU | 4 * P4 | 8*P4 |
| Memory | 128/256/512 GB | |
| Hard disk | 480GB SSD System Disk plus 1T*12 SSD (raid6) / 1.9T*9 SSD (raid6) / 2T*8 HDD (raid5) / other | |
| Operating system | Linux | |
| Network | 2* 10GB Ethernet | |
| Input voltage | 100-240V AC | |
| Power consumption | 1600W redundancy power module | |

• Face-In-One hardware dimension can be customized at order based on customer requirement. Hardware is commercial server.

System Architecture

