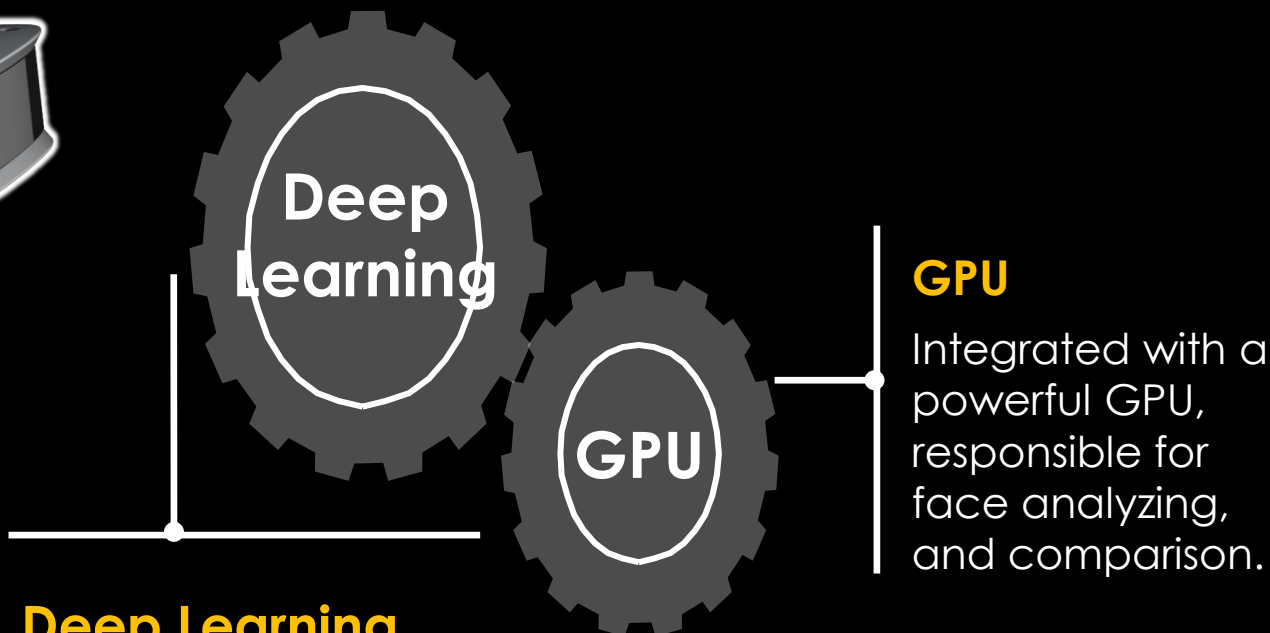




HIKVISION

IDS-2CD8426G0/F-I

Indoor Dual-lens Face Recognition Camera



Deep Learning

Algorithm

Adopting the latest and self-developed deep

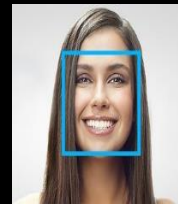
learning algorithm, outputs real-time face comparison results.

Traditional Algorithm VS Deep Learning

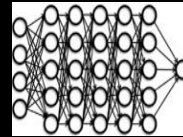
Traditional algorithm vs Deep Learning algorithm



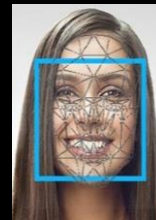
Features are manually specified by human. It is difficult to specify all the features.



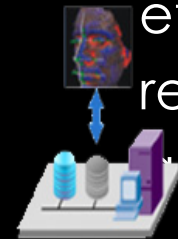
Face Photo



Deep learning



Face feature specified

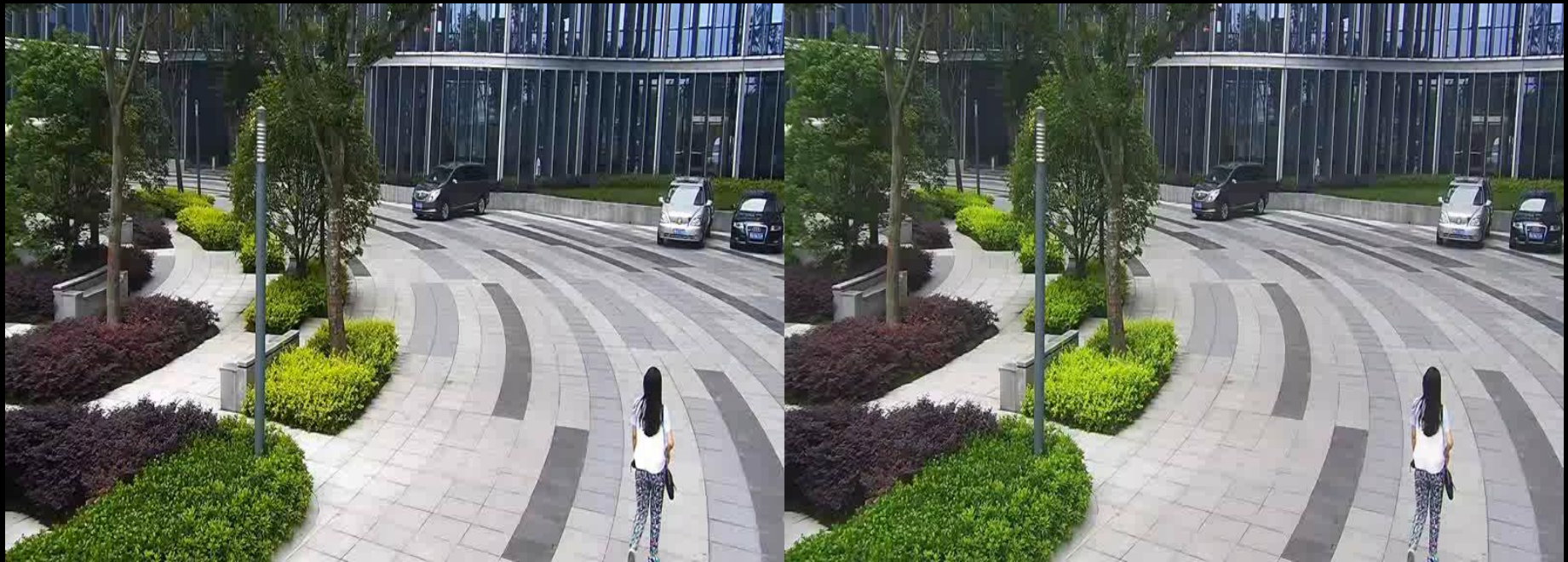


Identifies face characteristics

Features are concluded by algorithm automatically .

Abstract features (such as eyes, nose, cheeks, foreheads, etc.) are specified to realize a higher accuracy.

Traditional Algorithm VS Deep Learning



Dual lens DeepinView camera

Traditional camera

Deep Learning Algorithm Improvements

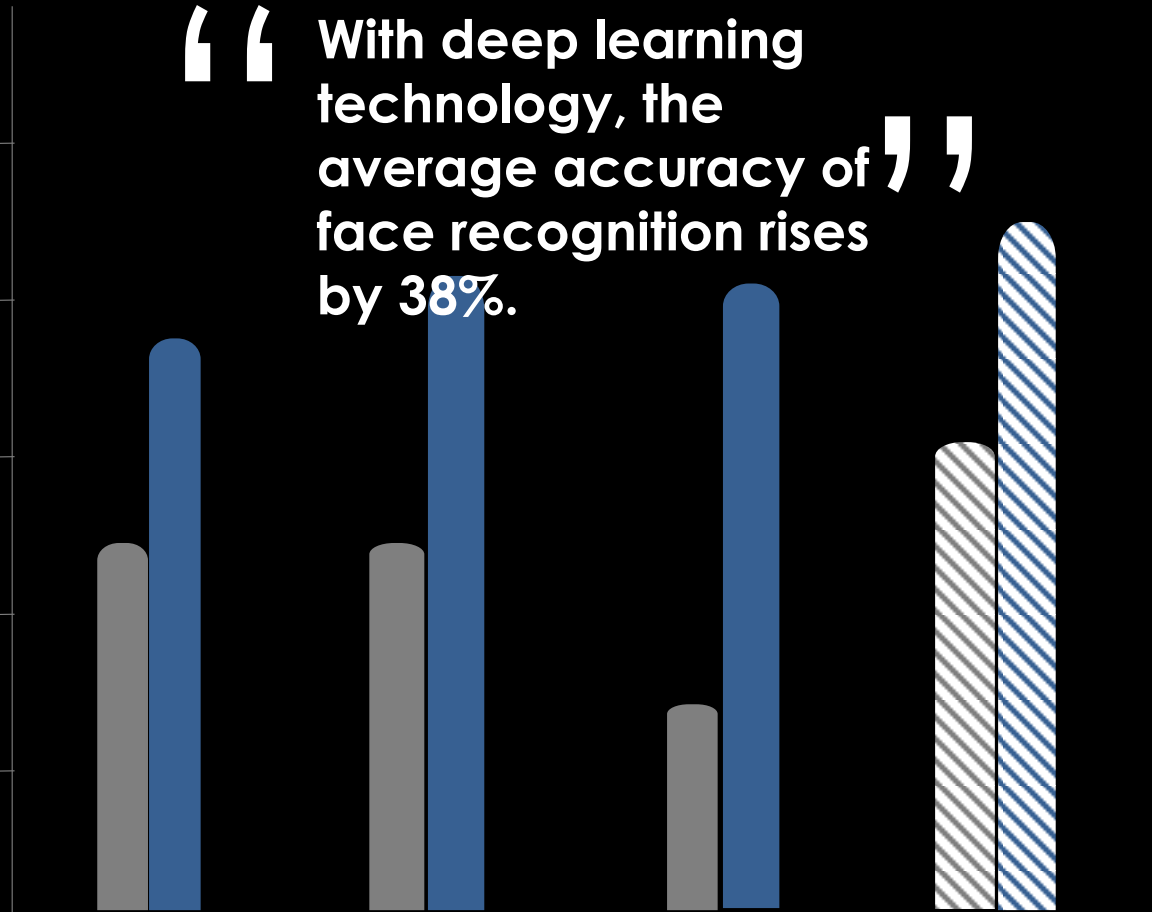
Deep Learning



Non Deep Learning



“ “ With deep learning technology, the average accuracy of face recognition rises by 38%. ” ”



Blurred Image

Side Faces

Small Target

In General

Indoor Dual-Lens Face Recognition Camera

HIKVISION

Hikvision Dual-Lens Face Recognition camera can do human face detection, capture, and recognition at the same time.



Live View
(Detection)

实时对比

	98% 相似度	
抓拍图像	王东 25岁 身份证号	录入图像
	95% 相似度	
抓拍图像	刘东盛 31岁 身份证号	录入图像
	72% 相似度	
抓拍图像	张德杰 25岁 身份证号	录入图像
	89% 相似度	
抓拍图像	刘东盛 31岁 身份证号	录入图像

Comparison
Results
(Recognition)

实时抓拍

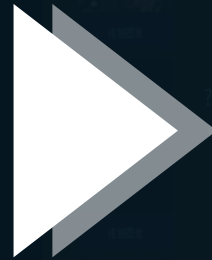
19:43:40	19:43:43	19:43:43	19:43:46	19:43:48	19:43:47	19:43:49	19:43:50

gongzi 形分人员大夫 新建文件夹
册 (3) 同事 无标题

Real Time Captured
Face
(Capture)

WMS-4200

Detection and Capture



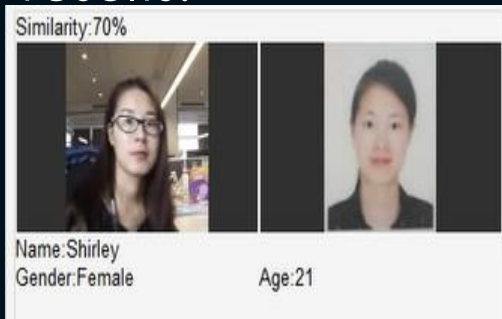
- It can detect and capture up to **30** faces at the same time.
- It can capture 1080p pictures and crop facial images simultaneously.
- Captured pictures can be stored in the SD card/NVR.

抓拍



Recogniti

- The captured picture gets compared with the database and the result displays
- Output face compare results:



ender



Face Libraries

Supports up to **30,000** pictures per face library, and face data size should less than **3G** in total (3 Libraries)

- Pictures inside the libraries can be uploaded via Web or VMS.

- Captured pictures can be

Acceptable Photos For Face Libraries

Types XAMPLES



ID Photo



Digital Photo



Captured Photo

Requirements

Pixels and Size:

- 40 <Min. Pupil Distance <300 (recommended: 60) pixels.
- 20KB <Photo Size<300KB

Face Angle :

- Left/Right<45° (recommended: <25°)
- Up/Down<25° (recommended: <15°)

Format :

JPEG



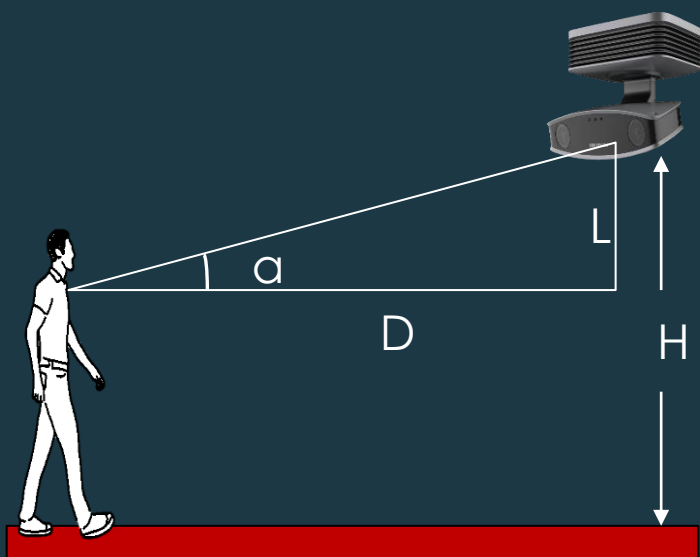
Installation & Configuration

3

Installation

Recommendation

How to choose the right position?



Model	Capture Width	Lens	Distance	Installation Height	Angle (α)
8426	2.5m	4mm	1.9m	1.8m	10°
8426	2.5m	6mm	2.9m	2.0m	10°
8426	2.5m	12mm	5.7m	2.5m	10°
8426	2.5m	16mm	7.6m	2.9m	10°

Tips

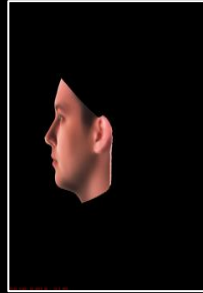
- The camera should be installed in the front of the people entering direction, the horizontal angle should be $<10^\circ$, the less angle is, the better the result will be.
- The camera should be higher than the people, recommended angle of depression is $\alpha=10^\circ$ to avoid

Installation

HIKVISION

Recommendation

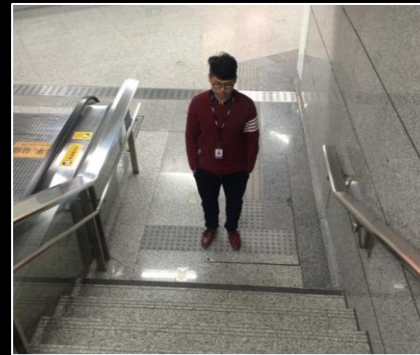
Capture requirement of human face direction



Left/Right <math>< 90^\circ</math>



Up/Down <math>< 30^\circ</math>



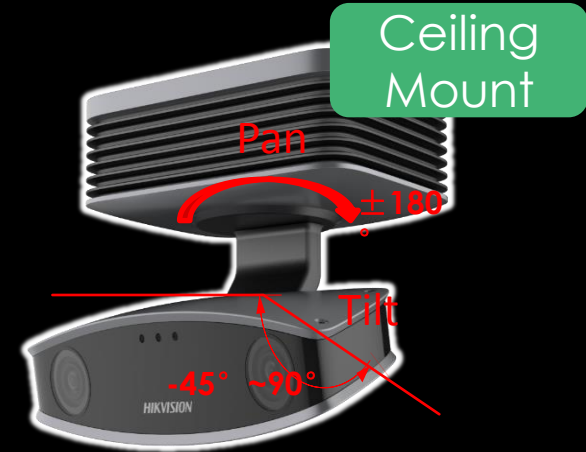
Installation

Dual-lens Face Recognition Camera

iDS-

2CD8426G0/F-

|



Installation on Graph

Easy installation,
only one power
line and one
network cable



DC3
6V



Web Configuration

1

Create the Face Picture Libraries

Support 3 Face Picture Libraries

(1) Add a face library

(2) Set Threshold, recommended: 70

(3) Add/Import pictures

Face Picture Library Configuration

Face Picture Library

- Face lib
- VIP
- Blacklist

Name: Gender: Modeling Status: Province:

City: ID Type: ID No.: Date of Birth: Fr...

Date of Birth: Fr...: 2017-06-28

No.	Name	Gender	Date of Birth	Place of Birth	ID Type	ID No.
1	Shirley	Female	2000-01-01	Unknown	Unknown	
2	Skye	Female	2000-01-01	Unknown	Unknown	

Add

Face Picture Library Name:

Threshold:

Remarks:

If the face data are upload by "Import", the face data should be modeling manually.

Config

2

Configuration

Rule, face picture comparison

- (1) Min. Pupil Distance should be >40 (recommended: 60) pixels.
- (2) Choose different Face Library to configure

The screenshot displays the Hikvision web interface for configuring a Face Picture Comparison rule. The interface includes a sidebar on the left with navigation options, a top navigation bar with 'Live View', 'Playback', 'Picture', 'Application', and 'Configuration' tabs, and a main content area. The 'Configuration' tab is active, showing the 'Face Picture Comparison' settings. The 'Enable Face Picture Comparison' and 'Face Capture Alarm' checkboxes are checked. The 'Face Picture Library' is set to 'Face lib'. The 'Arming Schedule' and 'Linkage Method' sections are highlighted with red boxes. The 'Linkage Method' section is further detailed in a callout window on the right, showing a 'Min. Pupil Distance' input field with a green checkmark.

Download Captured pictures

- (1) Insert a SD card
- (2) Search "Face Capture" and download



Insert a SD card

HIKVISION Live View Playback **Picture** Application Configuration admin Help Logout

Download by File Download Stop Downloading

Search Conditions	File List				
File Type	No.	File Name	Time	File Size	Progress
Face Capture	1	ch01_0000000000000047	2017-06-27 10:31:30	9 KB	
Start Time	2	ch01_0000000000000147	2017-06-27 10:31:30	541 KB	
2017-06-27 00:00:00	3	ch01_0000000000000247	2017-06-27 10:31:35	17 KB	
End Time	4	ch01_0000000000000347	2017-06-27 10:31:35	533 KB	
2017-06-28 23:59:59	5	ch01_0000000000000447	2017-06-27 10:31:38	10 KB	
Search	6	ch01_0000000000000547	2017-06-27 10:31:38	533 KB	
	7	ch01_0000000000000647	2017-06-27 10:31:50	23 KB	
	8	ch01_0000000000000747	2017-06-27 10:31:50	538 KB	
	9	ch01_0000000000000847	2017-06-27 10:32:01	8 KB	
	10	ch01_0000000000000947	2017-06-27 10:32:01	526 KB	
	11	ch01_0000000000001047	2017-06-27 10:32:06	23 KB	
	12	ch01_0000000000001147	2017-06-27 10:32:06	535 KB	
	13	ch01_0000000000001247	2017-06-27 10:32:45	22 KB	
	14	ch01_0000000000001347	2017-06-27 10:32:45	533 KB	
	15	ch01_0000000000001447	2017-06-27 10:32:47	45 KB	

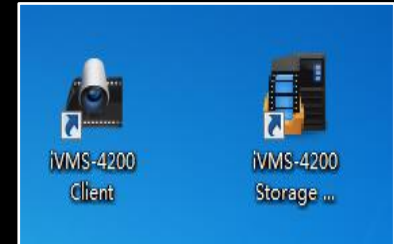
Total 674 Items << < 1/7 > >>

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4200

Config uration

- (1) Install the customized 4200 version V2.5 (include iVMS-4200 Client & iVMS-4200 Storage Server).
- (2) Open storage server and client
- (3) Add the Storage Server into Client
- (4) Configure



The screenshot shows the 'Remote Configuration' window with the 'Storage' section expanded to 'General'. The 'Configuring the HDD Parameters' section displays a table of HDDs and configuration options.

HDD No.	Capacity(GB)	Free Space(GB)	Status	Type	HDD Group ...	Property
<input checked="" type="checkbox"/> E	100.01	1.20	Normal	Local	Group00	Read/Write
<input type="checkbox"/> F	183.01	41.49	Exception	Local	Group00	Read/Write
<input type="checkbox"/> G	182.74	44.43	Unformatted	Local	Group00	Read/Write

Buttons: **Format** (highlighted with a red box), **Update**

Progress: 0%

Storage Mode: Quota

Total Capacity: 465.76 GB

Quota Ratio For Record:	70	%
Quota Ratio For Picture:	30	%
Quota Ratio For Additiona...	0	%

Save button (highlighted with a yellow circle)

4200

Config uration

- (1) Add device to Client
- (2) Configure the storage schedule
- (3) Configure face library

The screenshot shows the 'Remote Configuration' window with the 'Configure Face Picture Library' sub-window active. The left sidebar lists various system settings, with 'Face Picture Library Configuration' highlighted. The main area contains a form for adding face data and a table of existing entries.

Form Fields:

- Face Picture Library: face lib (dropdown)
- Buttons: Add, Modify, Delete, Import File, Export File, Batch M...
- Name: [] Gender: Not speci... (dropdown) Province: Not speci... (dropdown) City: Not speci... (dropdown)
- ID Type: Not speci... (dropdown) ID No.: [] Date of Birth: 1970-01-01 (calendar) To: 2017-06-26 (calendar)
- Modeling Status: Not speci... (dropdown)
- Buttons: Modeling, +, -, trash, refresh, list, grid

Table:

<input type="checkbox"/>	Name	Gender	Date of Birth	Province	City	ID Type	ID No.	Modeling Status
<input type="checkbox"/>	Shirley	Female	2000-01-01					Modeling Succeed
<input type="checkbox"/>	Skye	Female	2000-01-01					Modeling Succeed

4200

Perfor

HIKVISION

File System View Tool Help ivMS-4200 youshuixiu 11:41:55

Control Panel Face Picture Comparison Alarm Storage Schedule Device Management

Camera Live View Face Picture Compare Historical Face Picture ...

Search... Face Recognition Camera1_Face Recg...

06-26-2017 Mon 11:41:53

Camera 01

Face Capture Historical Face Capture

Similarity: 77%
Name: Shirley
Gender: Female Age: 27

Similarity: 85%
Name: Shirley
Gender: Female Age: 24

Similarity: 68%
Name: Shirley
Gender: Female Age: 28

11:41:34 11:41:40 11:41:41 11:41:46 11:41:49

Face Capture Alarm

The screenshot displays the HIKVISION ivMS-4200 software interface. The main window shows a live video feed of a woman with long dark hair and glasses, identified as Shirley. The interface includes a menu bar at the top with options like File, System, View, Tool, and Help. Below the menu is a toolbar with icons for Control Panel, Face Picture Comparison Alarm, Storage Schedule, and Device Management. The left sidebar contains a 'Camera' section with a search bar and a list of cameras, including 'Camera1_Face Recg...'. The main video area shows the live feed with a green bounding box around the woman's face and a red bounding box around her glasses. The date and time '06-26-2017 Mon 11:41:53' are displayed in the top left of the video area. Below the video is a 'Face Capture' section with a 'Historical Face Capture' button and a row of five small thumbnail images of the woman's face, each with a timestamp: 11:41:34, 11:41:40, 11:41:41, 11:41:46, and 11:41:49. On the right side, there are three 'Face Picture Compare' panels, each showing a similarity percentage and identifying the woman as Shirley, Female, with ages 27, 24, and 28 respectively. The bottom status bar shows a 'Face Capture Alarm' icon and other system icons.



Applications

4

Types of systems

Small & medium system



8426



Customized
iVMS-4200 V2.5



Normal NVR



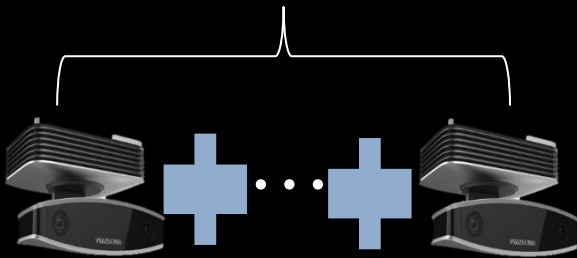
SD Card

Functions

- ◆ Real time face detection and capture
- ◆ Real time face comparison
- ◆ Download captured pictures
- ◆ Record video

Large system

Max 64



8426



DeepinMind
NVR



DeepinMind
server

Functions

- ◆ Manage multiple devices
- ◆ Real time face detection and capture
- ◆ Real time face comparison
- ◆ Download captured pictures
- ◆ Search by face

Application Scenarios

Retail

Shopping mall



Bank/Hotel



- Provides information such as name, age and gender to help the market manager make reasonable strategy.
- Identifies the VIP and informs the market manager thus improving their service.
- Identifies the habitual thief and gives warning to avoid loss.

Security

Custom



Government



- Informs the security when a suspect wants to escape from the custom/airport
- Improves the speed of finding a suspect by security system

Successful Cases

HIKVISION

Bank project—VIP customer recognition

Project List

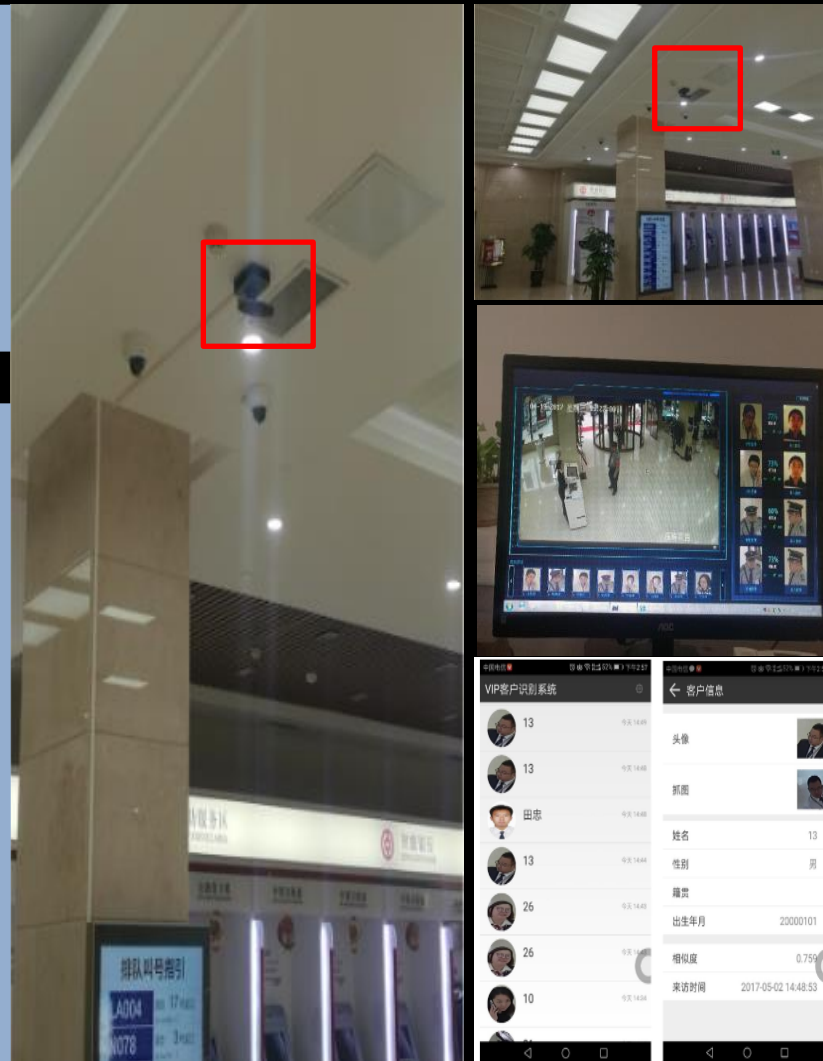
- Camera : iDS-2CD8426G0/F-I
- VMS : Bank IVMS-8100
- VMS : 4200

Functions

- Adopts iDS-2CD8426G0/F-I to do face capture and face comparison and cooperates with the bank VMS 8100 to provide VIP customer service.

User Benefits

- Low cost, high efficiency, high accuracy
- Recognizes VIP and informs the bank staff to arrange some VIP services to improve their experience



HIKVISION



THANK YOU