

HIKVISION

iDS-2CD8426G0/F-I



DeepinView Series

Dual-lens Face Recognition Camera

Front-end Department, Oversea Presales Team



CONTENTS

HIKVISION



Background



Product Key Features



Installation & Configuration



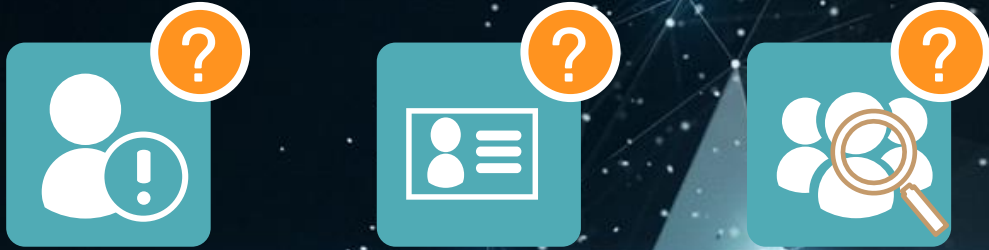
Applications



Background

1

Face Recognition Requirements



- How to identify the suspects immediately?
- How to identify the VIP in crowded customers?
- How to search the suspect in a massive database?
- How to control the main gate by face recognition?



Traditional Face Recognition Solution



Traditional Algorithm

Features are manually specified by human, difficult to do collect enough face features.



Low Accuracy

Still need human to double confirm the result.



Limited application

High installation requirement, limited application scenario.



HIKVISION



iDS-2CD8426G0/F-1

Hikvision DeepinView Dual-lens Face Recognition Camera

Provides the professional face recognition solution



Product Key Features

2



H.265+

iDS-2CD8426G0/F-I

Indoor Dual-lens Face Recognition Camera



Deep Learning

Deep Learning Algorithm

Adopts the latest and self-developed deep learning algorithm.

Outputs real-time face comparison results.



GPU

GPU

Integrated with a powerful GPU, responsible for face analyzing, and comparison.

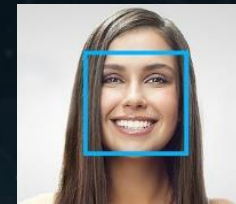
Traditional Algorithm VS Deep Learning

Traditional algorithm

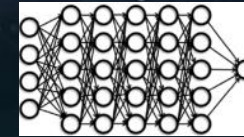


Features are manually specified by human. It is difficult to specify all the features.

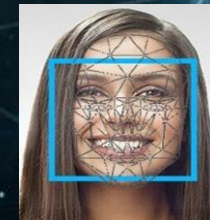
Deep Learning algorithm



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

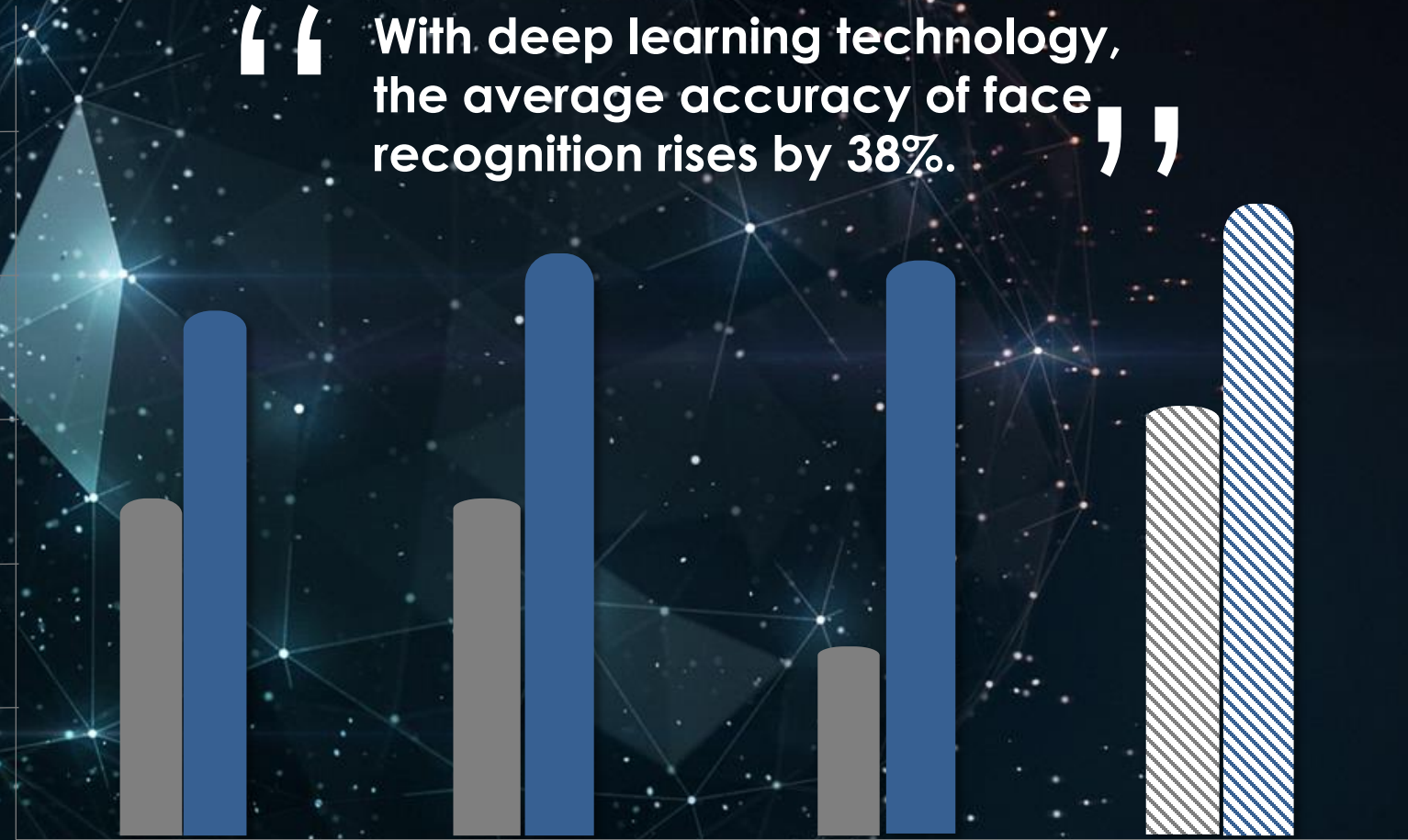
Deep Learning



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

Live View
(Detection)



Comparison Results
(Recognition)

实时对比

	98% 相似度	
抓拍图像	王亚 25岁	录入图像
	95% 相似度	
抓拍图像	刘永斌 31岁	录入图像
	72% 相似度	
抓拍图像	徐维俊 25岁	录入图像
	89% 相似度	
抓拍图像	刘永斌 31岁	录入图像

实时抓拍

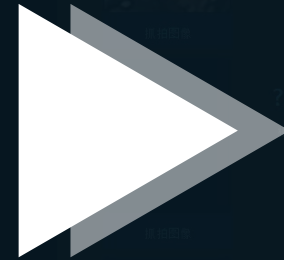
19:43:40	19:43:43	19:43:43	19:43:46	19:43:46	19:43:47	19:43:49	19:43:50
gongsi	郑分人员大头	新建文件夹	同事	无标题			
	照	(3)					

Real Time Captured Face
(Capture)

Detection and Capture



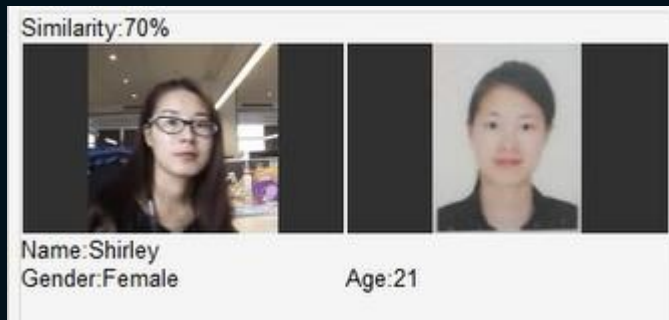
抓拍



- 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.

Recognition

- The captured picture gets compared with the database and the result displays
- Output face compare results: Similarity/Name/Gender/Age



Face Libraries

- Supports up to **30,000** pictures per face library, and face data size should be less than **3G** in total (3 Libraries)
- Pictures inside the libraries can be uploaded via Web or VMS.
- Captured pictures can be added to the libraries.

Acceptable Photos For Face Libraries

Types

EXAMPLES



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

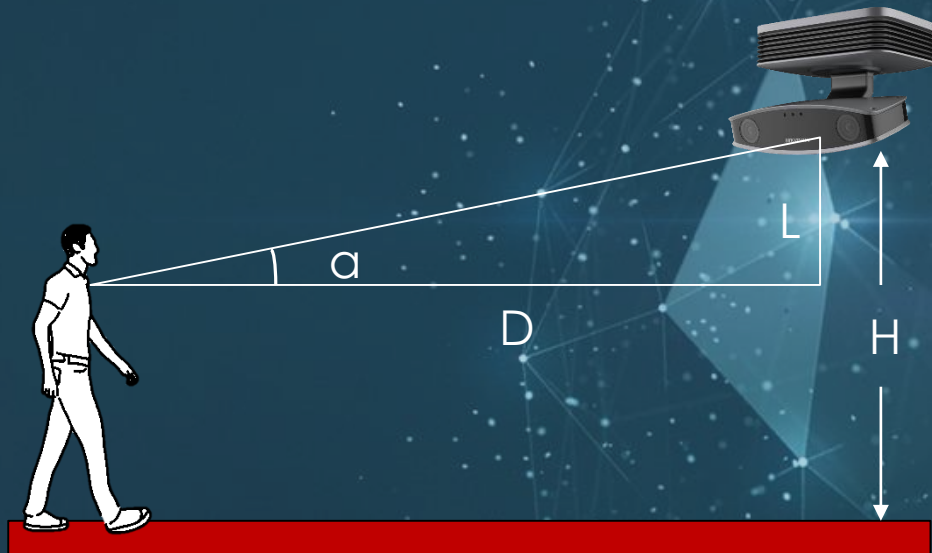


Installation & Configuration

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 blocking the person's face.

Installation Recommendation

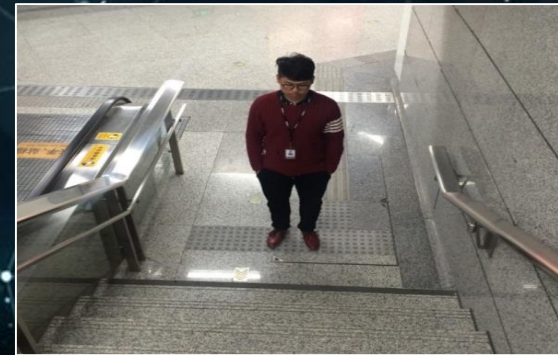
Capture requirement of human face direction



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



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



Installation

Dual-lens Face Recognition Camera

iDS-2CD8426G0/F-I

Installation Graph

- Easy installation, only one power line and one network cable



DC36V



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 Comparison Statistics **Face Picture Library Configuration**

Face Picture Library +

Face lib

VIP

Blacklist

Name: Gender: Not specified Modeling Status: Not specified Province:

City: Not specified ID Type: Not specified ID No.: Date of Birth: Fr...: 2017-06-28

Search Reset

Import Add Modify Delete

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: face lib ✓

Threshold: 60 ✓

Remarks: VIP ✓

OK Cancel

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

©Hikvision Digital Technology Co., Ltd. All Rights Reserved.

Web Configuration

2

Configure Rule

Rule, face picture comparison

(1) Min. Pupil Distance should be >40
(recommended: 60) pixels.

(2) Choose different Face Library to configure

The screenshot shows the HIKVISION web configuration interface. The top navigation bar includes 'Live View', 'Playback', 'Picture', 'Application', and 'Configuration' (highlighted in red). The user is logged in as 'admin'. The left sidebar contains various configuration categories, with 'Rule' and 'Face Picture Comparison' highlighted in red. The main content area is titled 'Face Picture Comparison' and includes the following settings:

- Enable Face Picture Comparison
- Face Capture Alarm
- Face Picture Library: Face lib
- Arming Schedule: [Arming Schedule] Linkage Method
- Buttons: Delete, Delete All

The 'Linkage Method' section is expanded, showing a table with columns for 'Arming Schedule' and 'Linkage Method'. The table has rows for each day of the week (Mon-Sun) and a time axis from 0 to 24. The 'Linkage Method' section is further detailed with the following options:

- Normal Linkage
- Trigger Alarm Output
- Notify Surveillance Center
- A->1

Yellow circles highlight the 'Enable Face Picture Comparison' checkbox, the 'Face lib' dropdown, the 'Linkage Method' section, and the 'Notify Surveillance Center' checkbox. A red box highlights the 'Rule' and 'Face Picture Comparison' items in the left sidebar. A red box on the right side of the interface highlights a 'Min. Pupil Distance' input field with a green checkmark icon.

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 Name	Time	File Size	Progress	
File Type Face Capture	<input type="checkbox"/>	No.	File Name	Time	File Size	Progress
Start Time 2017-06-27 00:00:00	<input type="checkbox"/>	1	ch01_0000000000000047	2017-06-27 10:31:30	9 KB	
End Time 2017-06-28 23:59:59	<input type="checkbox"/>	2	ch01_0000000000000147	2017-06-27 10:31:30	541 KB	
<input type="button" value="Search"/>	<input type="checkbox"/>	3	ch01_0000000000000247	2017-06-27 10:31:35	17 KB	
	<input type="checkbox"/>	4	ch01_0000000000000347	2017-06-27 10:31:35	533 KB	
	<input type="checkbox"/>	5	ch01_0000000000000447	2017-06-27 10:31:38	10 KB	
	<input type="checkbox"/>	6	ch01_0000000000000547	2017-06-27 10:31:38	533 KB	
	<input type="checkbox"/>	7	ch01_0000000000000647	2017-06-27 10:31:50	23 KB	
	<input type="checkbox"/>	8	ch01_0000000000000747	2017-06-27 10:31:50	538 KB	
	<input type="checkbox"/>	9	ch01_0000000000000847	2017-06-27 10:32:01	8 KB	
	<input type="checkbox"/>	10	ch01_0000000000000947	2017-06-27 10:32:01	526 KB	
	<input type="checkbox"/>	11	ch01_0000000000001047	2017-06-27 10:32:06	23 KB	
	<input type="checkbox"/>	12	ch01_0000000000001147	2017-06-27 10:32:06	535 KB	
	<input type="checkbox"/>	13	ch01_0000000000001247	2017-06-27 10:32:45	22 KB	
	<input type="checkbox"/>	14	ch01_0000000000001347	2017-06-27 10:32:45	533 KB	
	<input type="checkbox"/>	15	ch01_0000000000001447	2017-06-27 10:32:47	16 KB	

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

© Hikvision Digital Technology Co., Ltd. All Rights Reserved.

4200 Configuration

- (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. On the left is a navigation tree with categories: System (Device Information, General, Time, System Maintenance, Log, User), Network, Storage (General, File), and Event. The 'General' option under 'Storage' is selected. The main area is titled 'Configuring the HDD Parameters' and contains a table of HDDs. Below the table are 'Format' and 'Update' buttons. A progress bar shows 0%. At the bottom, there are settings for 'Storage Mode' (Quota), 'Total Capacity' (465.76 GB), and three 'Quota Ratio' settings: 'Quota Ratio For Record' (70%), 'Quota Ratio For Picture' (30%), and 'Quota Ratio For Additiona...' (0%). A 'Save' button is in the bottom right corner.

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

4200 Configuration

- (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' section active. The left sidebar shows a tree view with 'Face Picture Library Configuration' selected. The main area contains a form for adding face data and a table of existing entries.

Form Fields:

- Face Picture Library: - Name: Gender: Province: City:
- ID Type: ID No.: Date of Birth: To:
- Modeling Status:

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

A red box highlights the 'Modeling' button and a set of icons (add, edit, delete, refresh, list, grid) in the toolbar. A yellow circle highlights a mouse cursor over the table area.

4200 Performance

HIKVISION

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

Control Panel **Face Picture Comparison Alarm** Storage Schedule Device Management

Camera

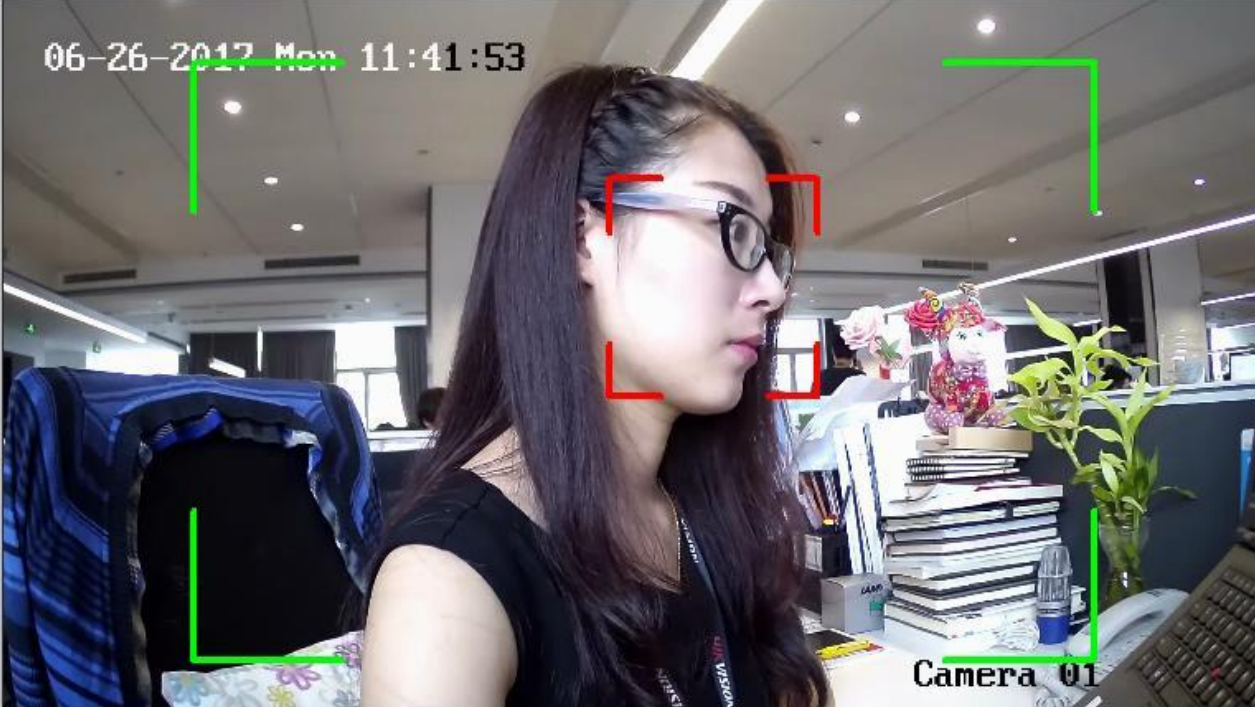
Search...

Face Recognition

Camera1_Face Recg...

Live View

06-26-2017 Mon 11:41:53




Camera 01

Face Picture Compare


Historical Face Picture ...

Similarity: 77%



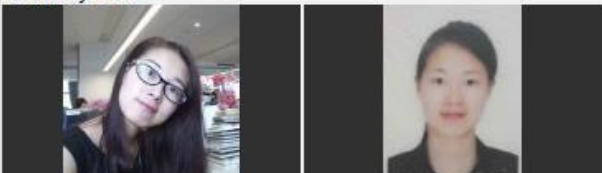
Name: Shirley
Gender: Female
Age: 27

Similarity: 85%



Name: Shirley
Gender: Female
Age: 24


Similarity: 68%



Name: Shirley
Gender: Female
Age: 28

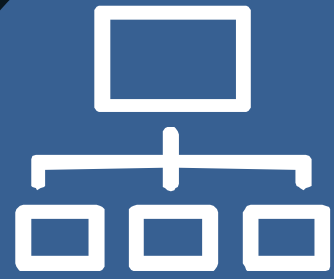
Face Capture

Historical Face Capture



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

Face Capture Alarm



Applications

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 picture
- ◆ Record video

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

Bank project—VIP customer recognition

HIKVISION

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