



A Retailer's All-Around Assistant

Hikvision's New 71 Series DeepinView Cameras

From general retail scenarios to high-end stores, the cameras offer retailers both quantitative and qualitative understanding of their customer traffic for effective management and operation optimization.



Enhance your business with AI

The DeepinView series has a variety of intelligent functions, which can be widely used in the retail sector, public safety, building and other industries, to improve monitoring efficiency and save labor costs.



Multiple Intelligent Functions:

Integrate a variety of algorithms in one device to meet the needs of different industries



High Quality Image:

Meeting the monitoring requirements of different environments.



User-friendly:

Ease of integration and protection

Hikvision
Dedicated
DeepinView
Cameras



7 Intelligent Modes



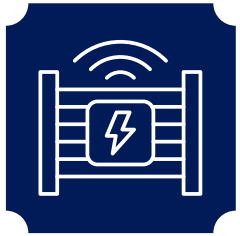
Face Recognition:

Supporting face capture, comparison and object attribute analysis



Multi-Target-Type Detection:

Supporting face and human body capture and object attribute analysis, face comparison.



Perimeter Protection:

False alarm reduction



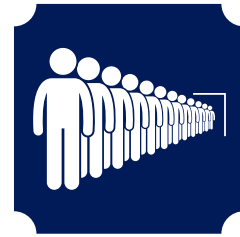
People Counting:

Excluding shop employees and repetitive consumers to count people accurately. Face comparison and object attribute analysis.



Hard Hat Detection:

Detecting whether the person wears a hard hat or not.



Queue Management:

Detecting the number of people and wait time of each person in line.

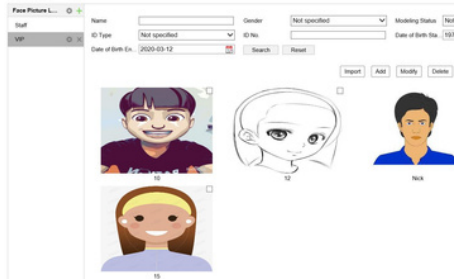


Vehicle Analysis:

Supporting ANPR and vehicle feature analysis.

Face Recognition

1. Face Picture Library



2. Face Capture
Best shot / quick shot



3. Face Comparison

4. Result

Comparing the captured face image with the face images in the face picture libraries to get a comparison result.

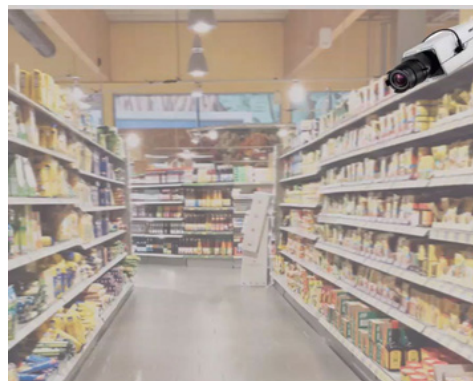
- Hikvision face recognition cameras support human face detection, capture, recognition and feature analysis at the same time.
- List alarm based on comparison results
- 3 face libraries with 90 000 face images in total

Application Scenario:



Commercial Sites:

- Hotels, car dealers, retail stores, etc.
- Improving service quality through VIP customer recognition.



Public Security

- Banks, industry parks, schools, safe city projects, etc.
- Enhancing the security of public areas through list alarm feature.

People Counting

Shop staff as counted as duplicated targets

Recognition History



Customer



Security



Shop Manager



Customer



Customer



Staff Member



Customer



Exclude Targets

- Shop Staff
- Shop Manager
- Cleaning Staff
- Security
- Repairman, etc.



Repetive consumers are counted as duplicated targets.

A customer comes

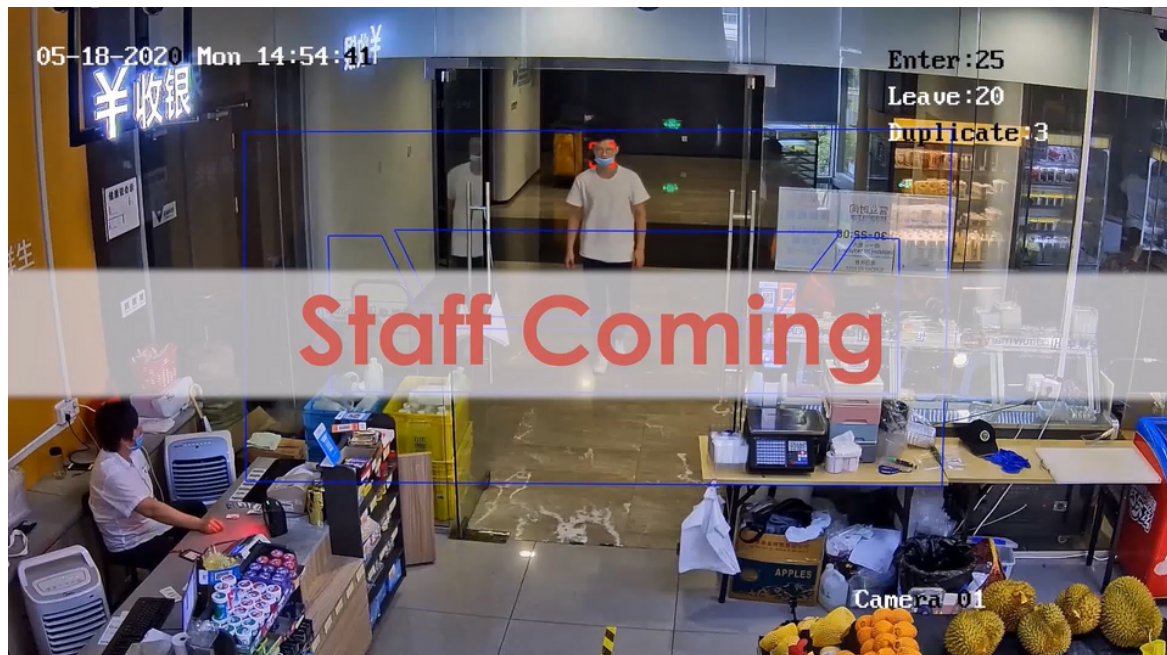


The customer goes out for a certain time period and returns



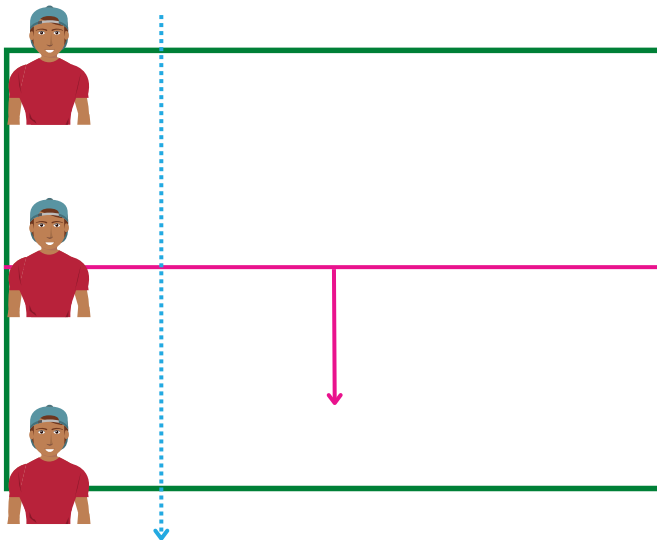
ENTER +
DUPLICATE 1

People Counting



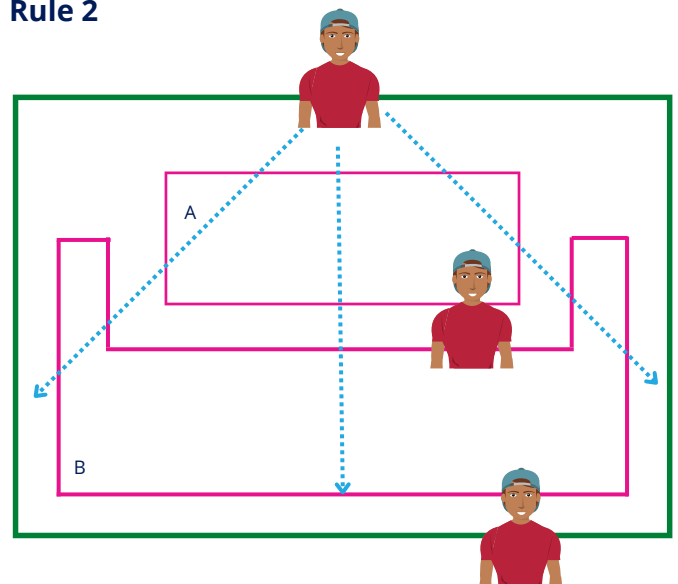
- Counting the number of people coming in and going out.
- The duplicate count will increment if the entering person is an employee or a repetitive customer (the employee face image library and time interval for repetitive entries need to be configured)
- The range of time interval for repetitive entries to be counted as duplicates is from 0s to 34h59min59s

Rule 1



1. The target enters the detection area
2. The target crosses the line
3. The target leaves the detection area
4. To determine if the target is an employee or a repetitive customer

Rule 2



1. The target enters region A
2. The target leaves region A then it enters region B
3. The target leaves region B
4. To determine if the target is an employee or A repetitive customer

People Counting

Attribute:

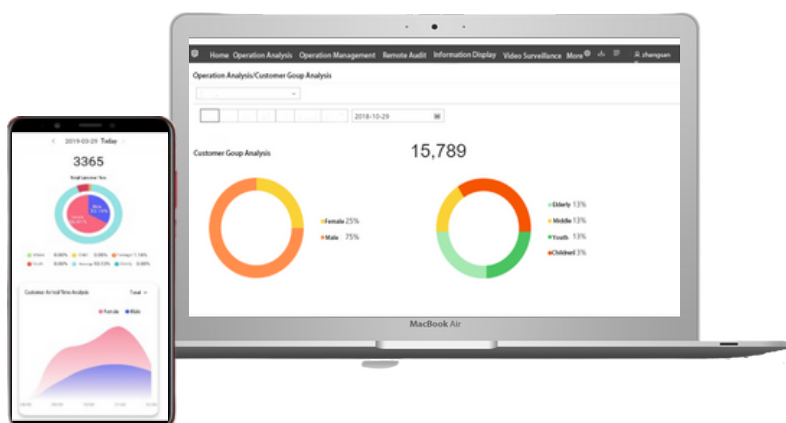
SKU selection for different stores based on the consumer attributes (gender, age, face expression of consumers, etc.) analysis is the core application of offline data.

Example; if children make up more than 30% of the total customers in the store, the operator should increase SKUs of candy and toys to improve turnover.



Scenario:

Facing the entrance to recognize customers coming in and extract object attributes.



People Counting

Application:

1 Camera



Accurate People Counting:

Accurate customer counting assist industries which focus on effective customer number to optimize operation, such as car dealers, luxury stores, high-end retail stores, etc.



Object Attribute Analysis:

Object attribute analysis can help operators locate customer characteristics accurately, to conduct precision marketing.




List Alarm:

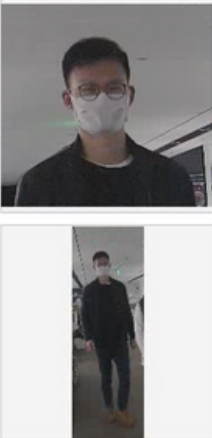
To provide tailored service to VIP customers to improve shopping experience and to enhance security level through list alarm.

Multi-Target Type Detection

Real-time Analysis

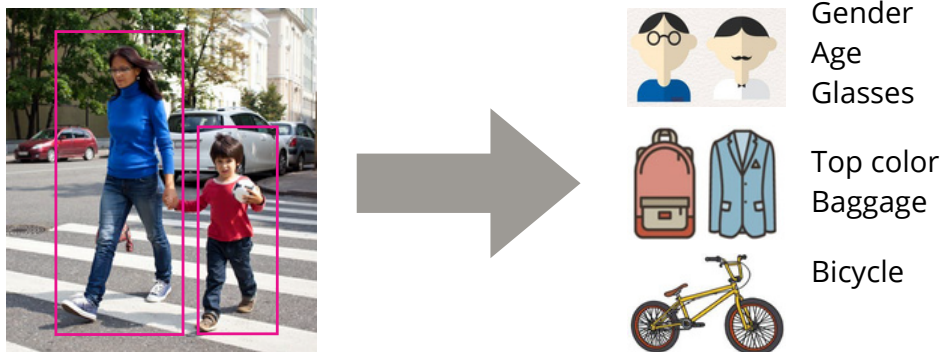


Camera Name	Camera 01	Capture Time	2034-01-02 00:46:56		
Gender	Female	Age	28	Age Group	Middle Age
Wearing Glasses	No	Wearing Mask	Yes	Facial Expression	No Expression
Wearing Hat	No	Full Beard	No	Moving Direction	Right
Top Color	White	Bottom Color	Blue	Carrying Bag	No
Carrying Thing	No	Top Type	Long Sleeve	Bottom Type	Pants
Hairstyle	Long Hair	Riding Bicycle	Unknown	Riding with...	Unknown



Camera Name	Camera 01	Capture Time	2034-01-02 00:47:23		
Gender	Male	Age	21	Age Group	Youth
Wearing Glasses	Yes	Wearing Mask	Yes	Facial Expression	Sad
Wearing Hat	No	Full Beard	No	Moving Direction	Right
Top Color	Black	Bottom Color	Unknown	Carrying Bag	No
Carrying Thing	No	Top Type	Long Sleeve	Bottom Type	Pants
Hairstyle	Short Hair	Riding Bicycle	Unknown	Riding with...	Unknown

Attribute Extraction and Modeling:



- Modeling done by cameras to reduce the burden of back-end devices
- Quickly search by attributes to improve efficiency (in the back-end)

Hard Hat Detection

Safety is extremely important: The Hikvision DeepView series can detect whether a person wears a hard hat or not, and timely triggers an alarm when someone does not wear a hard hat, which is essential to ensure safety.



Application Scenarios Examples:



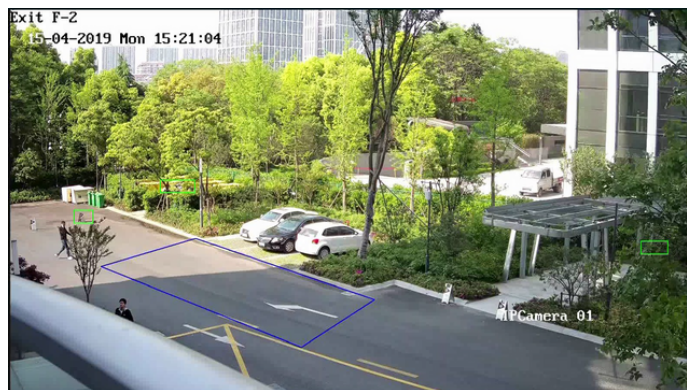
- Construction Sites
- Mining Industry
- Smelthing Industry
- Substations



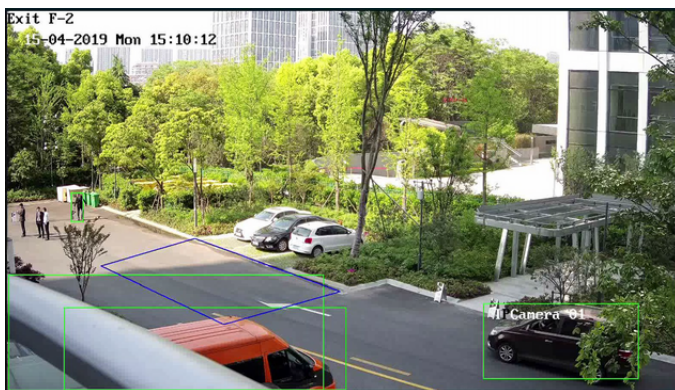
Perimeter Protection

For conventional cameras, all targets crossing the perimeter will trigger alarms which cause a lot of trouble for the user. Now, the perimeter protection camera supports only sending alarms that are triggered by human only, vehicle only or human and vehicle.

Improve efficiency and save bandwidth by target classification and false alarm reduction



Triggered by Human Only



Triggered by Vehicle Only



- The camera will only track humans and vehicles through EPTZ. It helps users not only get more details regarding targeted objects under a limited bandwidth, but also save storage space by only storing clips of effective objects.
- Hikvision 7 series cameras support automatic tracking of humans, vehicles or human and vehicles.

Queue Management

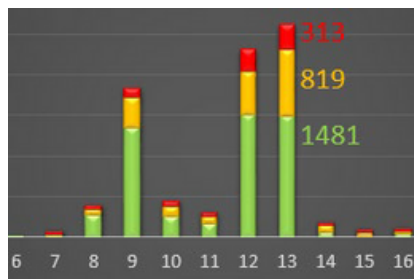
Hikvision DeepView series can detect the number of persons and the wait times of each one in a queue to inform the most effective staff deployment. Queue management assists in generating reports to help clients analyze the queues.

Queue management is the process of managing and optimizing queues to improve operational efficiency and the queuing experience. These cameras support detecting the number of people and the wait time of each person in line.



A queue management camera supports 3 detection areas:

- The waiting time $\leq 5s$
- $5s < \text{waiting time} \leq 10s$
- Waiting time $> 10s$



Optimize Queue Management:

Increase or reduce the number of cashiers according to the queue data, improving operational efficiency



Improve Shopping Experience:

The queue management system will alert cashiers when the number of people or the wait time of anyone in line is greater than the threshold; operators can then take actions to improve customers' experience.



Increase turnover:

Digital queue management application can result in operational improvement, cost reduction, and increased profitability.

Vehicle Analysis



Dual Mode:

To capture and recognize license plates accurately in different scenes.

High Performance

To reduce missing rate effectively.

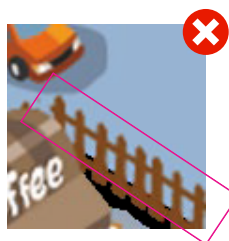
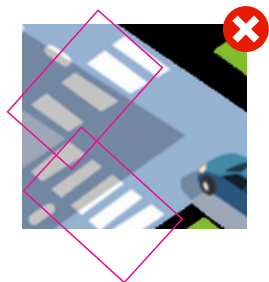
Vehicle Attribute Analysis:

To support vehicle analysis at checkpoints on city streets.

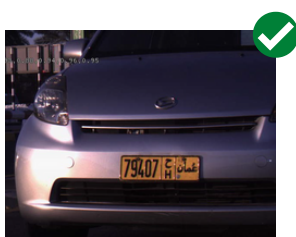


Dual Modes switchable to reduce false recognition:

1. Vehicle priority: recognizes the license plate after detecting a vehicle
2. License plate & vehicle: detects the license plate and vehicle at the same time



- Mode 2 is recommended when the vehicle can't be detected because of low light or poor installation environment



Higher performance chip to reduce missing rate

Deep learning algorithm runs on high performance chips



No-plate vehicle detection

Recognition result: No plate



Direction Detection

Linkage Method	
Direction <input checked="" type="radio"/> All <input type="radio"/> Forward <input type="radio"/> Reverse	
<input type="checkbox"/> Normal Linkage	<input checked="" type="checkbox"/> Trigger Alarm Output
<input checked="" type="checkbox"/> Notify Surveillance Center	<input checked="" type="checkbox"/> A->1
<input type="checkbox"/> Upload to FTP/Memory Card/...	<input checked="" type="checkbox"/> A->2

Vehicle Analysis

Hikvision ANPR cameras support vehicle analysis at checkpoints on city streets:

The screenshot displays the Hikvision Smart Display interface. The top navigation bar includes 'Live View', 'Playback', 'Picture', 'Application', 'Configuration', and 'Smart Display' (which is highlighted). The main area is divided into three sections:

- Live View:** A large video feed showing a street scene with a white van. The timestamp '2020-03-16 11:36:38' is visible.
- Real-time Analysis:** A panel on the right showing detailed vehicle information:

Camera Name	海山17	Capture Time	2020-03-16 11:36:38
Plate No.	AAH72N9	Vehicle Type	Large Bus
License Plat.	Unknown	Vehicle Color	White
Vehicle Brand	Unknown	Moving Dire.	Reverse
Country	Australia	List library n...	otherList
- Vehicle Detection:** A grid of four smaller video feeds showing different vehicles with their license plates: AAH72N9, AL T709, AM9U70, and AA8S6T8.

At the bottom, there is a copyright notice: '©2020 Hikvision Digital Technology Co., Ltd. All Rights Reserved.'

- License plate
- Vehicle type
- Vehicle color
- Vehicle brand
- Moving direction

- Quick search by vehicle attributes to improve efficiency (on back-end)