



AI Driven Decisions

Digifort is driven to provide faster real-time intelligence to enable informed decisions with greater efficiency.

AI Based

Object/behaviour detection.

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INTELLIGENT
ENTERPRISING
DEPENDABLE

Digifort IPXAnalytics is a software that uses Artificial Intelligence to learn and detect events in surveillance cameras.

Artificial intelligence is based on artificial neural networks, which are algorithms that try to mimic the behaviour of the human brain. Operationally we can consider a neural network as a “processing box” that can be trained so that from one input dataset it can generate one or more outputs. It is then possible to “teach” and “train” the application to recognize a specific object in various images. Or you can ask it to count how many times the object appears.

Compared to video analysis software on the market today, IPXAnalytics can reduce the amount of “false positive” alarms considerably. Today the platform can detect over 90 objects.

There are 3 types of modules:

✓ General Module

Identifies over 90 objects types.

Fire & Smoke

Objects: Cell Phone, Backpack, Handbag, Suitcase, Chair, Fire Hydrant, Bench, Frisbee, Skis, Snowboard, Sports ball, Kite, Baseball bat, Baseball glove, Skateboard, Surfboard, Tennis racket, Bottle, Wine glass, Chair, Sofa, Potted plant, Bed, Dining table, Toilet, TV monitor, Laptop, Mouse, Remote, Keyboard, Microwave, Oven, Toaster, Sink, Refrigerator, Book, Clock, Vase, Scissors, Teddy bear, Hair dryer, Toothbrush, Cup, Fork, Knife, Spoon, Bowl.

Vehicles: Car, Motorbike, Bus, Train, Truck, Boat, Aeroplane, Bicycle.

Animals: Cat, Dog, Cow, Horse, Sheep, Bird, Elephant, Bear, Zebra, Giraffe.

Traffic signs: Traffic light, Stop sign, Parking meter.

Food: Banana, Apple, Sandwich, Orange, Broccoli, Carrot, Hot dog, Pizza, Doughnut, Cake.

✓ Crime Module

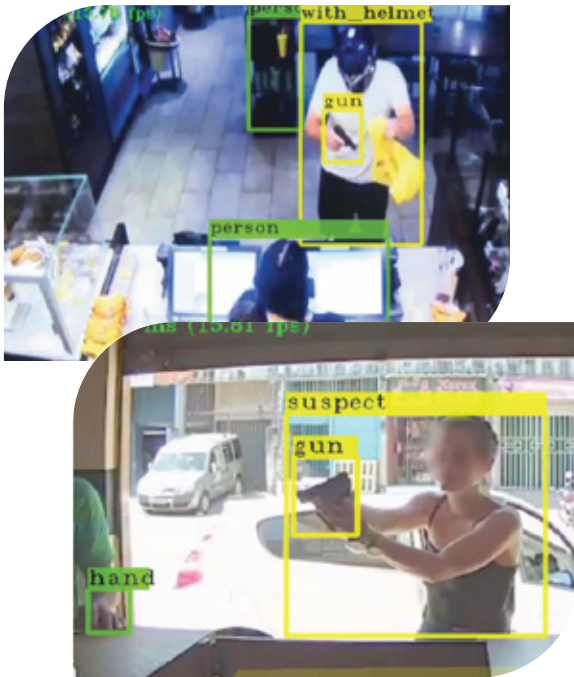
Module for Weapons Detection.

Person, suspect, gun, with Helmet (motorcycle, biker), hand, and shotgun, mask (black one only), headpiece, hat.

✓ PPE Module

Identifies if the person is wearing:

A hard helmet, Safety vest, Bike helmet, Masks and Goggles, Gloves, Lab coat.



Suspicious and / or Flagrant Behavior Alarm

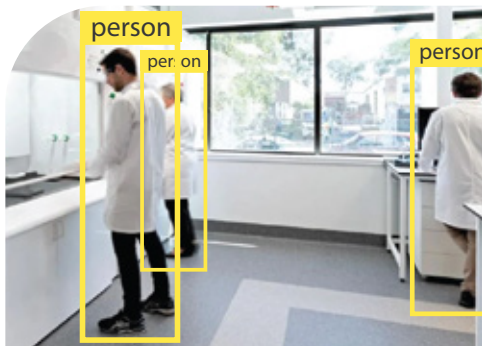
Digifort IPXAnalytics is designed to address situations where there are suspicious and / or blatant behaviors such as a person entering a pharmacy, bank, supermarket without removing the motorcycle helmet.

In such situations it is possible to configure an alert when the software recognizes the “helmet” or “person with weapon” object, among others.

Weapons detection technology has become a valuable tool that many security professionals are giving more consideration to, in light of the gun violence tragedies we see in our society on a regular basis.

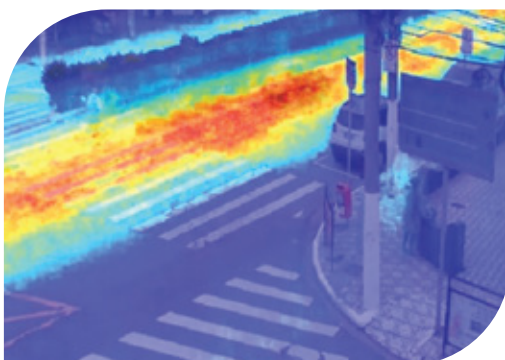
It's important for schools, facilities and places of public gathering to become more proactive and save lives and minimize the tragedy.

Detecting an Active Shooter early can Enhance Emergency or Law enforcement Response.



PPE (Personal Protection Equipment)

The use of PPE is fundamental in the fight for the prevention and protection of workers. Therefore, ensuring that the protective PPE is in use is of paramount importance.



Motion Heatmap

You can activate a motion Heatmap to highlight an area in your image the most movements.

The system will save a snapshots of the heatmap every X seconds configured like the example on the left:

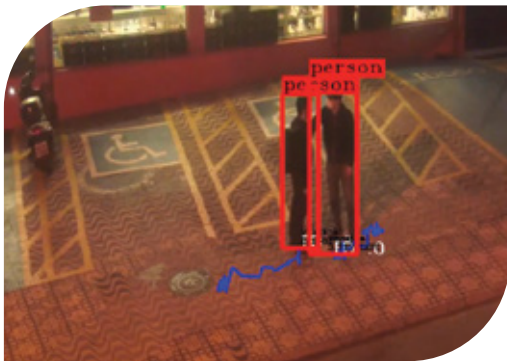


Object Counting

Using Digifort IPXAnalytics, you can determine the minimum or maximum number of objects allowed in a given area.

For example, in the image on the left we have a parking lot. Through the system we can program an alarm that warns when the car spaces are all filled. Thus, the operator upon receiving the notice may take appropriate action.

Another application would be for controlling queues or areas. The maximum number of people per row (or area) and the maximum waiting time can be determined. Thus, when the amount and time is exceeded an alarm is triggered for the operator.

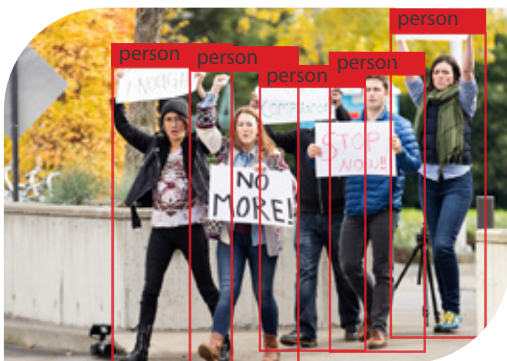


Distance Between Objects

Social Distance Monitoring

Using Distance logic you can trigger alarms if you have two or more objects near each other more than X metre apart.

It has never been more critical during Coronavirus pandemic in our efforts to protecting the public and stopping the spread of Coronavirus and helping businesses get back to a new normal.



Crowd Detection

Digifort's AI-powered IPXAnalytics for detection of Crowding using Unusual Activity Detection.

It can highlight any unanticipated crowd by automatically flagging unusual activity such as a certain number of people within a certain distance from each other.

An alarm (global event in Digifort) will include the video image that triggered the alarm along with the reference image, bookmarking for the event, enabling operators to verify the event and act quickly.



Object Orientation

With object Orientation filter you can trigger alarms only if your target object is in a horizontal position like the yellow object in the image above:



Fork Lift Detection.

To prevent fork lift accidents in the warehouse.

Fall Detection

Falls are a common occurrence for seniors, and, as many caregivers know, they can be very frightening.

A slip and fall injury, is a premises liability claim. Apart from genuine cases, fake falls to claim insurance money are common, costing hundreds of thousand dollars in settlement costs.

Fall detection can save seniors lives and ensure you always have the evidence to call out the fake claims.

Pose Detection

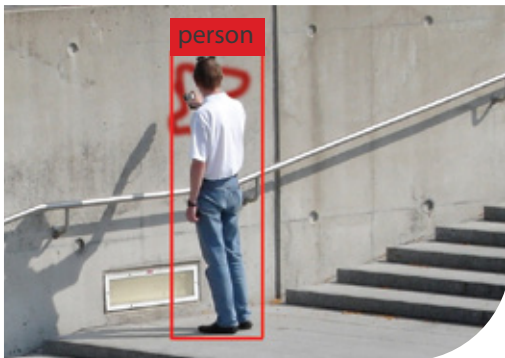
Human pose detection is a computer vision-based technology that detects and analyzes human posture.

The skeleton-based model consists of a set of joints (keypoints) like ankles, knees, shoulders, elbows, wrists, and limb orientations comprising the skeletal structure of a human body.

2 poses detectable:

- Hands up
- Sitting position

OBJECT ORIENTATION



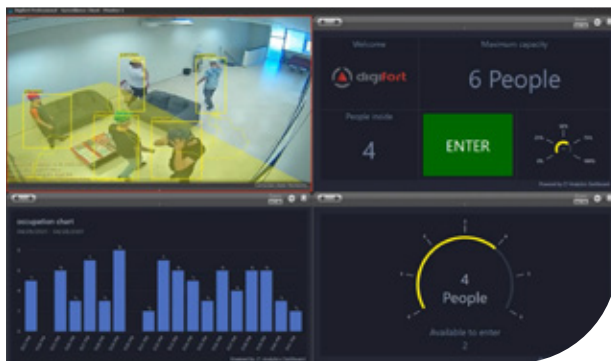
Stopped / Loitering

Trigger an alarm when object is stopped or loitering inside a zone more than X seconds.



Colour Detection

Trigger an alarm if the colour contains or does not.



Dashboard

The occupancy dashboard shows the number of people in the zone, with an enter / do not enter option. Alerts can be triggered if occupancy levels are exceeded. There is also a bar-chart tracking occupancy over time, available for the entire recording period.

2 Methods Of Counting.

Line Crossing

You can count the object crossing the line IN/OUT. Total SUM can be calculated in a single line multiple lines in a camera view; and multiple lines across multiple cameras.

Zone Counting

Occupancy zones are drawn in the camera view. Total occupancy can be calculated in a single zone; multiple zones in a camera view; and multiple zones across multiple cameras. People can enter and exit the zone from any direction.



Smoke and Fire Detection

Whether it is an Aged Care facility, commercial shopping centre or high rise building through to heavy industrial and highly technical industrial sites, an early fire detection with an effective alert system can be life-saving.



Another example would be a ban on the use of mobile devices in specific areas. In this example, we can combine object identification conditions such as “person” + “mobile”.

The system recognizes the “person” object, but if it does not identify the “cellphone” object as well, the alert is not triggered. The moment the system recognizes both objects, an alarm is triggered immediately.

Control in Hazardous Areas

Areas or places that require an exclusive surveillance post due to the hazardous operation or level of access control can use Digifort IPXAnalytics software.

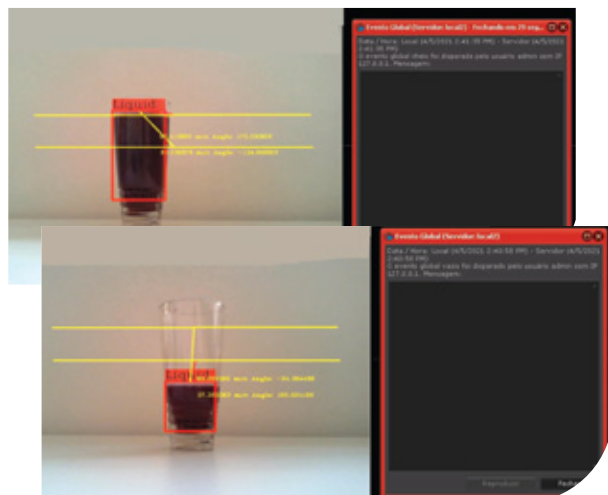
One of the applications would be, for example, a hazardous area where people are prohibited from entering while there is a truck. You can configure the system to trigger an alarm when detecting any presence of person immediately, as pictured here.



Perimeter Control

Similar to our last example of hazardous areas, Digifort IPXAnalytics software can be used for perimeter intrusion alarms. This allows you to configure the alert only for the objects that you need.

As an example, we can determine that in a certain fence, there can be no presence of animals. Therefore, if a person approaches, the alarm will not be triggered, but if any animal approaches the system will trigger an alert.



Customized Industry Solution* Distance to Line Analytics

Measure the distance between an object and a line and the angle.

Trigger an alert when the object (liquid metal) is above the line.

Trigger an alert when the object (liquid metal) is below the line.

*Depending on customer's requirement, different objects can be learned. This is customization and subject to a development fee.

Our team can customize our algorithms and detections to fit your needs.

Minimum Hardware Required

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For 60 cameras @ 1 fps:

Intel(R) Core(TM) i9-10900K CPU
@ 3.70GHz 3.70 GHz
16GB RAM
500 GB HD SSD
Video card: RTX3090

For 60 cameras @ 1 fps:

Intel Xeon E-2278G @ 3.40GHz
16GB RAM
500 GB HD SSD
Video card: 2 x RTX4000

For 40 cameras @ 1 fps:

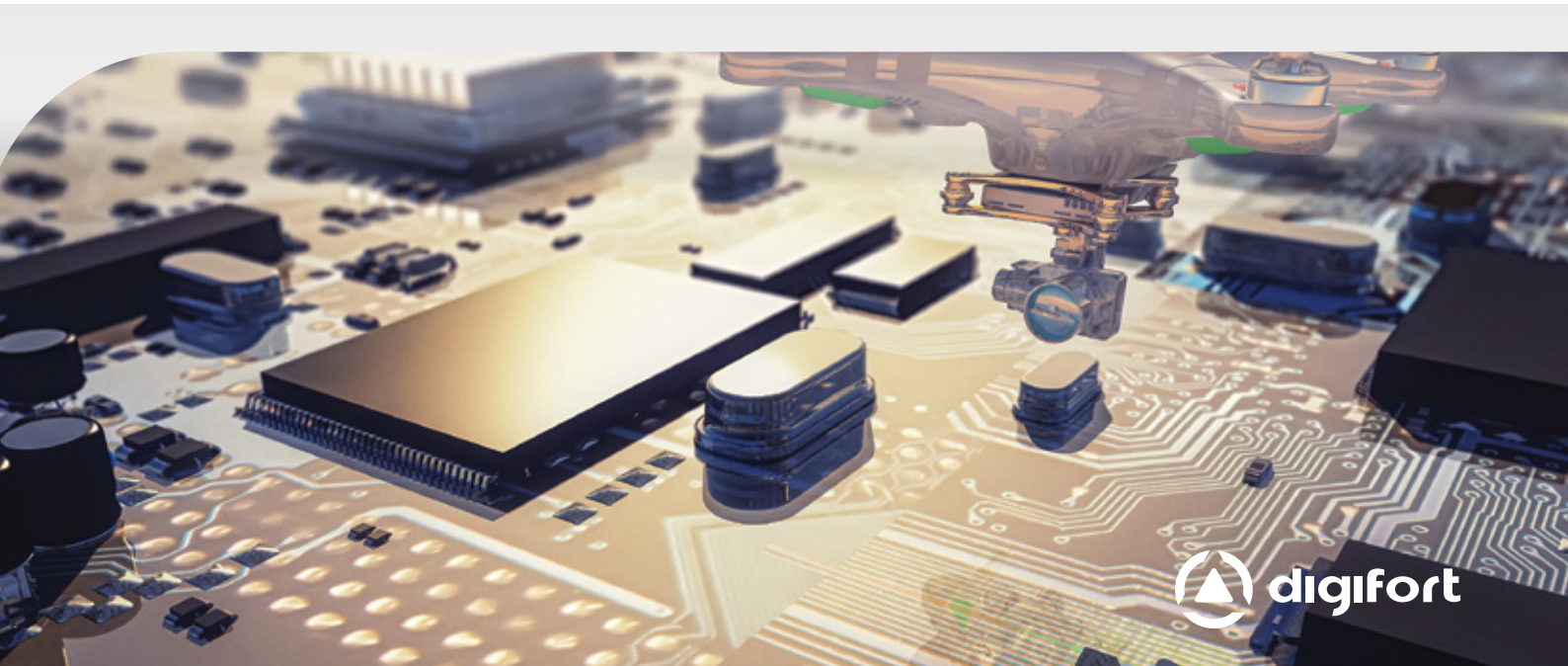
i7-8700 @ 3.2GHz
16GB RAM
500 GB HD SSD
Nvidia Geforce RTX 2080 8 GB

For 25 cameras @ 1 fps:

I5-8400 @ 28 GHZ
8 GB RAM
500 GB HD SSD
Nvidia Geforce GTX 1080 ti 11GB

For 10 cameras @ 1 fps:

I5 @ 2.5 GHz
8GBb RAM
500 SSD
NVIDIA 2060 6GB



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