



digifort

IPX ANALYTICS



**The Artificial  
Intelligence  
Revolution**

Has Begun

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 behavior 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.

Compared to video analysis software on the market today, Digifort IPXAnalytics can reduce the amount of “false positive” alarms considerably.

Today the platform can detect over 80 objects such as: person, boat, car, motorcycle, truck, plane, cellphone, notebook, television, suspect, weapon, long gun, motorcycle helmet, (person) with helmet or without safety helmet - PPE, etc.

Through constant “teaching” and “training” the number of objects will continue to grow while improving its accuracy and performance.

## IPXAnalytics Usage and Application Examples



### Control in Hazardous Areas

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

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

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 recognize the “cellphone” object as well, the alert is not triggered. The moment the system recognizes both objects, an alarm is triggered immediately.



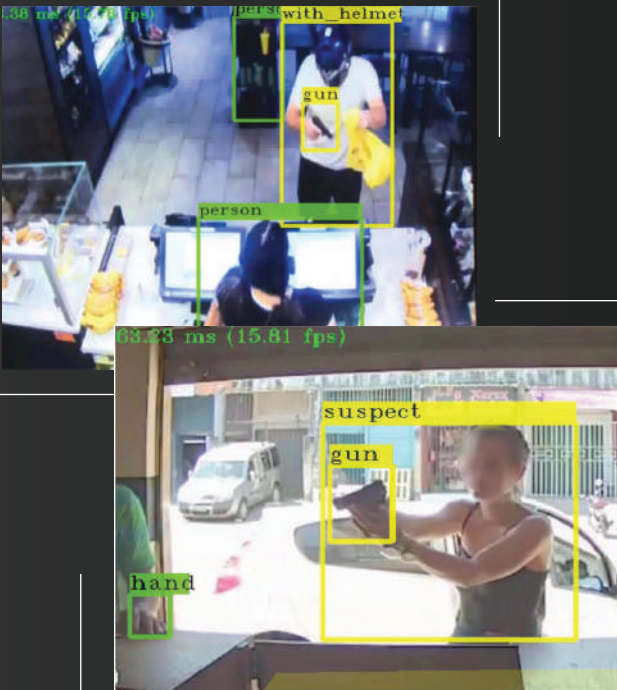
## Perimeter Control



Similar to our last example of hazardous areas, Digifort IPXAnalytics 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 is approached, the system will trigger an alert.

## 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 Control: Safety Helmet Use



The use of PPE (Personal Protective Equipment) is fundamental in the fight for the prevention and protection of workers.

Therefore, ensuring that the protective helmet is in use is of paramount importance.

In this way Digifort IPXAnalytics is able to identify whether the worker is wearing the helmet or not, regardless of the helmet color.



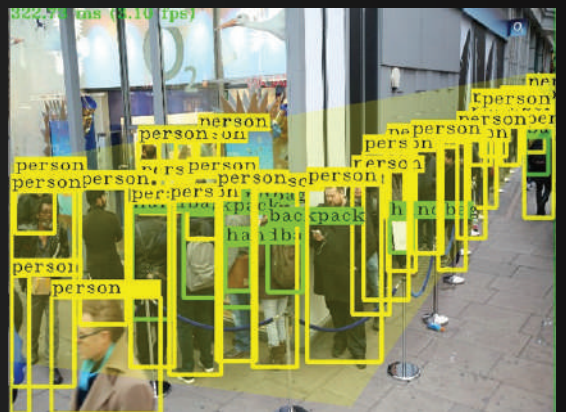
## Object Counting

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

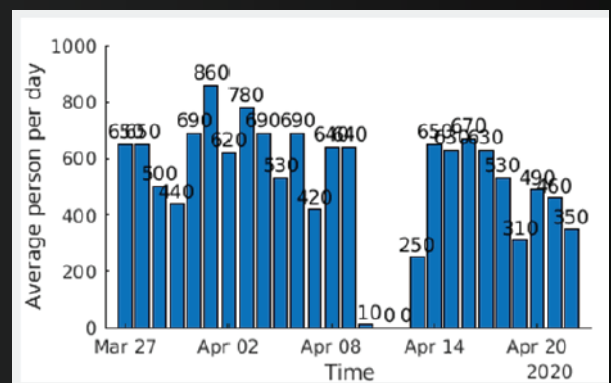
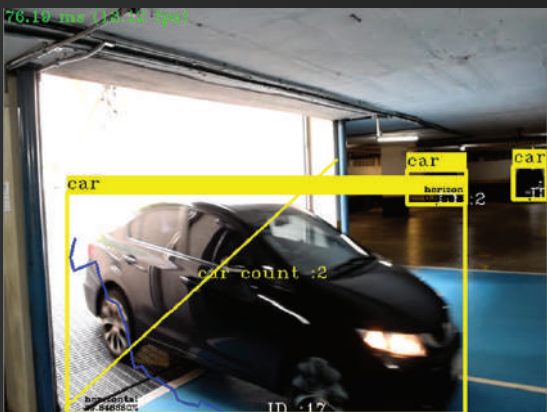
For example, in the image below we have a parking lot. Through the system we can program an alarm that warns when the car spaces are all filled. Thus, the operator upon receiving the notice may take appropriate action.



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.



## Crossing Line / Counting



With crossing line you can trigger an alarm when some object is crossing the line and keep a counting of the events.

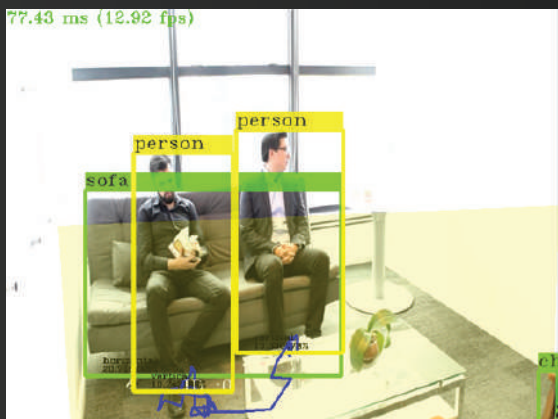
### Monitor Occupancy

By applying In/Out counting logic, you can have live count of how many people inside a store or an office. When there are more than one entrances, it will be a total sum of those entrances.

Using open IOT platforms you can generate graphs and statistics. The image below shows a counting using thingSpeak.com website:

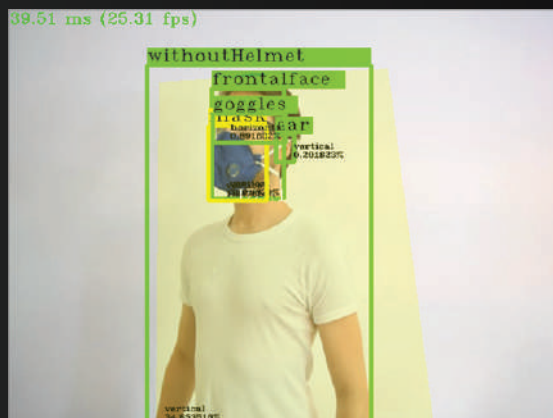
ThingSpeak allows you to aggregate, visualize and analyze live data streams in the cloud.

## Stopped / Loitering



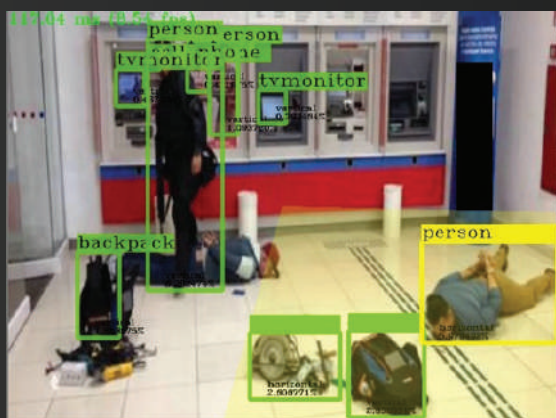
Trigger an alarm when object is stopped or loitering inside a zone more than X seconds.

## Contains Logic



Using "contains" logic you can be able to know if there is an object inside another object or if there is no target object. Example: You may want an alarm with someone is wearing a mask or if someone is not wearing a mask.

## 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 on the left:

### 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.

## Motion Heatmap



You can activate a motion Heatmap to highlight in your image the most movement areas. The system will save a snapshots of the heatmap every X seconds configured like the example on the left:

## Distance



### 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.

## Licenses

IPXAnalytics has three types of modules:

### ✓ General Module

Identifies over 80 object types.

Person, Bicycle, Car, Bike, Airplane, Bus, Train, Truck, Boat, Semaphore, Fire hydrant, Traffic sign, Parking meter, Bank, Bird, Cat, Dog, Horse, Sheep, Cow, Elephant, Bear, Zebra, Giraffe, Backpack, Umbrella, Purse, Tie, Suitcase, Frisbee, Skis, Snowboard, Sportsball, Kite, Baseball bat, Baseball glove, Skateboard, Plank, Tennis racket, Bottle, Wineglass, Cup, Fork, Knife, Bowl, Banana, Apple, Sandwich, Orange, Broccoli, Carrot, Hotdogs, Pizza, Donut, Cake, Chair, Sofa, Plant, Bed, Dining table, Bathroom, tv / monitor, Laptop, Mouse, Remote, Keyboard, Cellular, Microwave, Oven, Toaster, Sink, Refrigerator, Book, Watch, Vase, Scissors, Teddy bear, Hair dryer, Brush.

### ✓ Crime Module

Identifies short and long weapons (firearm), suspicious positioning (aiming position), motorcycle helmet and mask.

### ✓ PPE Module

Identifies if the person is wearing a hard helmet, masks and goggles.



## Minimum Hardware Required

### For 40 cameras @ 1 fps:

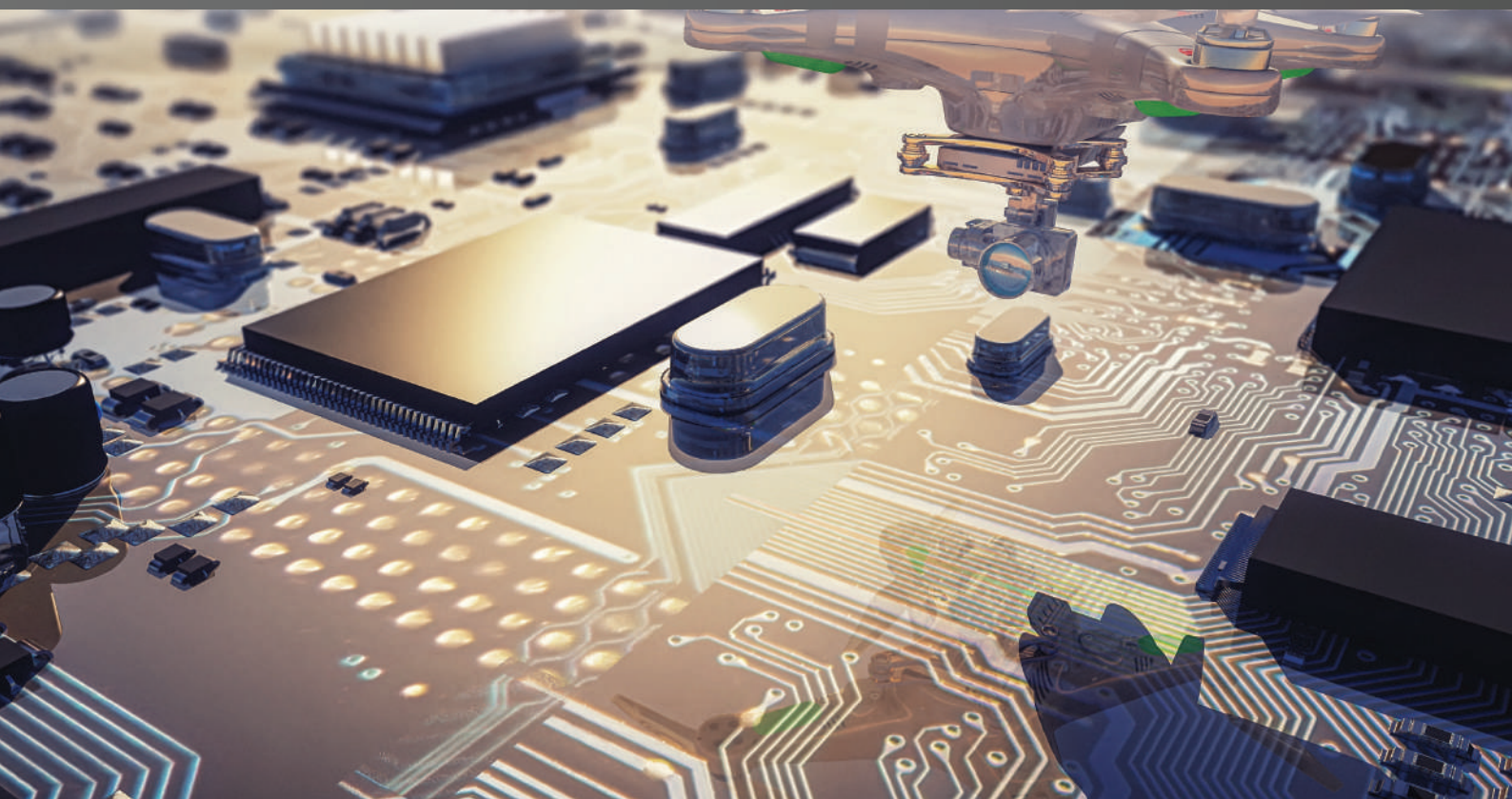
i7-8700 @ 3.2GHz  
16GB RAM  
500 GB HD SSD  
Nvidia Geforce RTX 2080 8 GB

### For 25 cameras @ 1 fps:

I5-8400 @ 2.8 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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