BIZCUIT Vision Analytics

AI Vision Technology for Business Transformation

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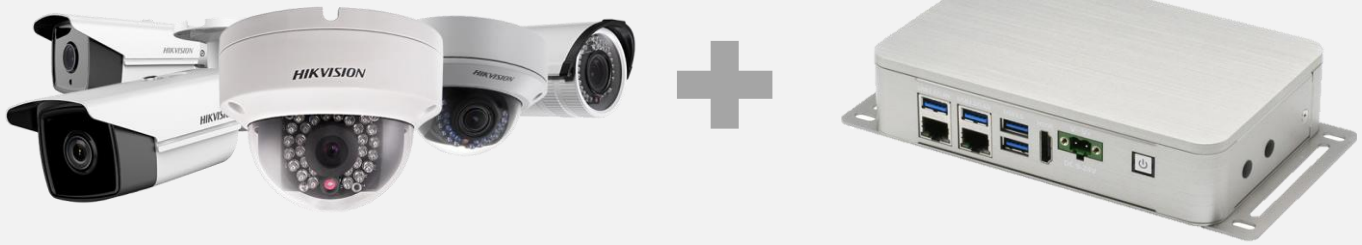
The solution with capability to turn normal IP CCTV into Analytics Camera by only connecting the device to POE switch

Edge-Computing Video Analytics

Working with Computer Vision using AI for Real Time Analytics

No Video Recordings (No worries about PDPA)

Module1 : AI Analytics Camera



Module2 : Working with current IP CCTV and turning into AI Analytics Camera

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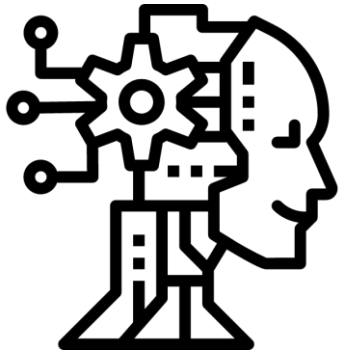
Most ECONOMIC way to turn normal IP CCTV into AI Solutions

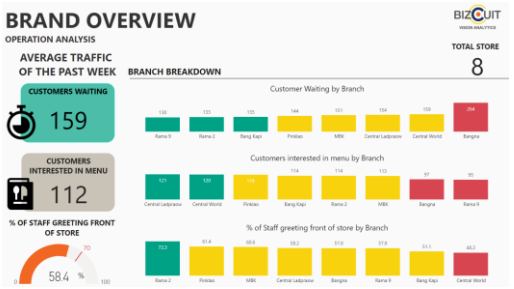
Real-Time AI Analytics on Device

Operates from Pool of AI Capabilities



Alerts and Send Information Real-Time

Aggregate Real-Time Report



A Scalable Real Time Video Analytics Solutions

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Configurable Solutions That Drive Performance

Monitor Traffic

Outside camera

AI Traffic Count

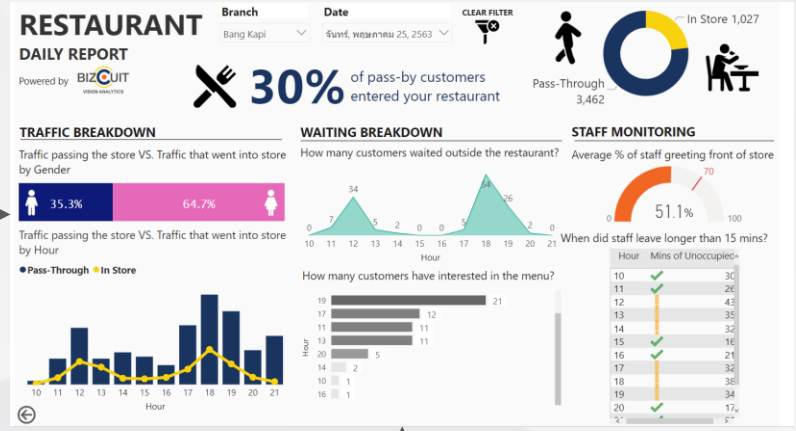
AI Occupancy Detection

Monitor Staff Operation

Inside camera

ALERT SYSTEM

Single Performance Dashboard



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Use cases

Thailand's leading IT and Gadget Retail

Traffic conversion and staff engagement

Thailand's No1. Diamond Jewelry Retail

Staff operation audit

Thailand's leading IT and Gadget Retail

Store conversion and product display engagement

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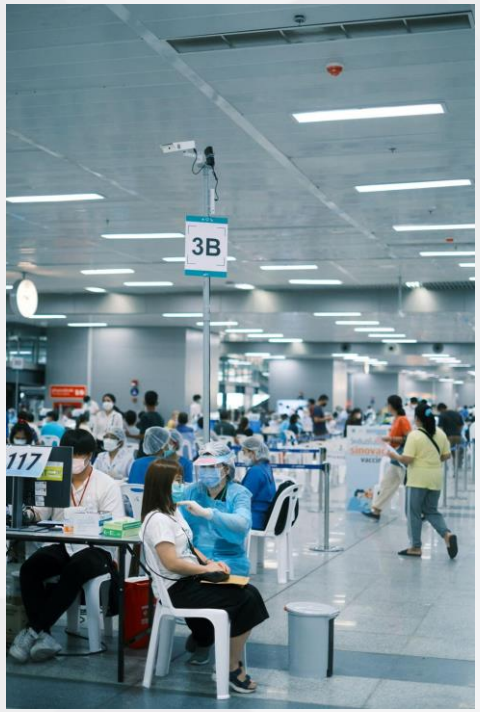
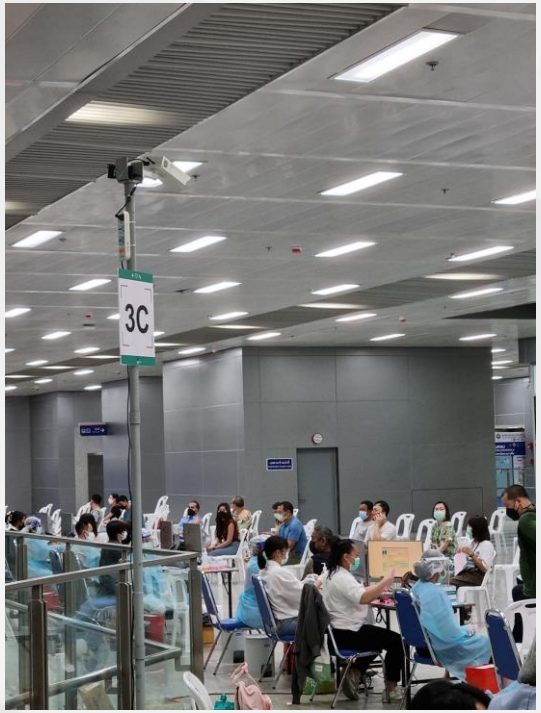
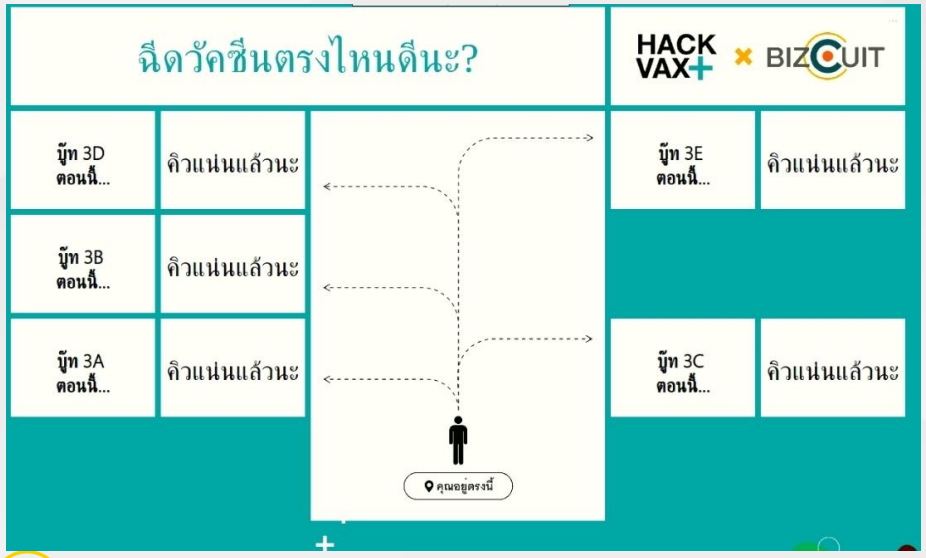
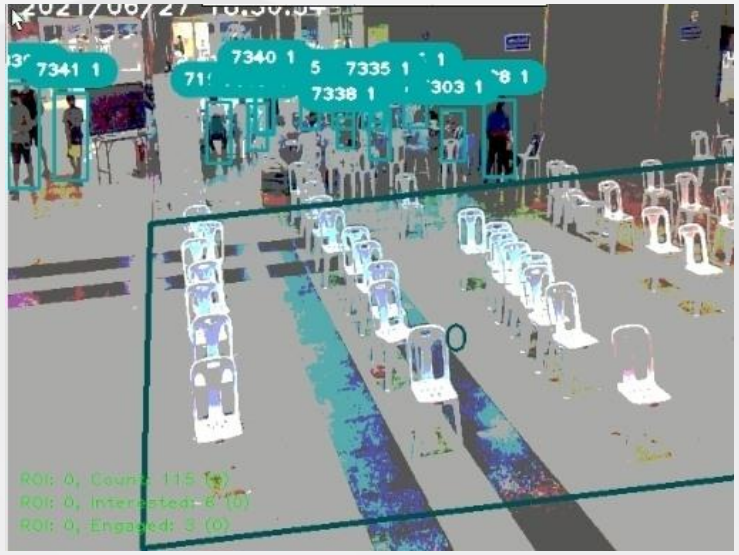
Bizcuit X HackVax+

Traffic management









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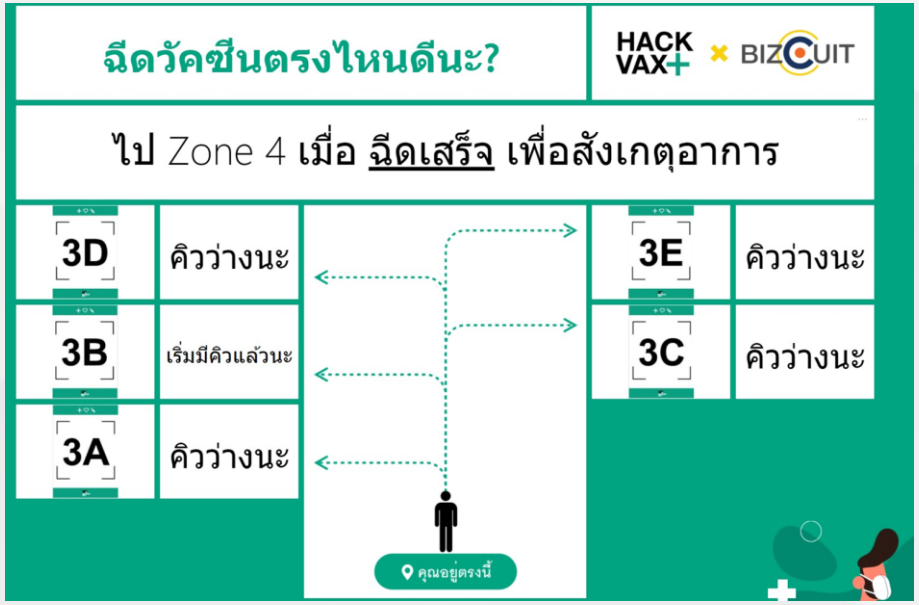
Analytic Dashboard

Bizcuit X HackVax+

Traffic management



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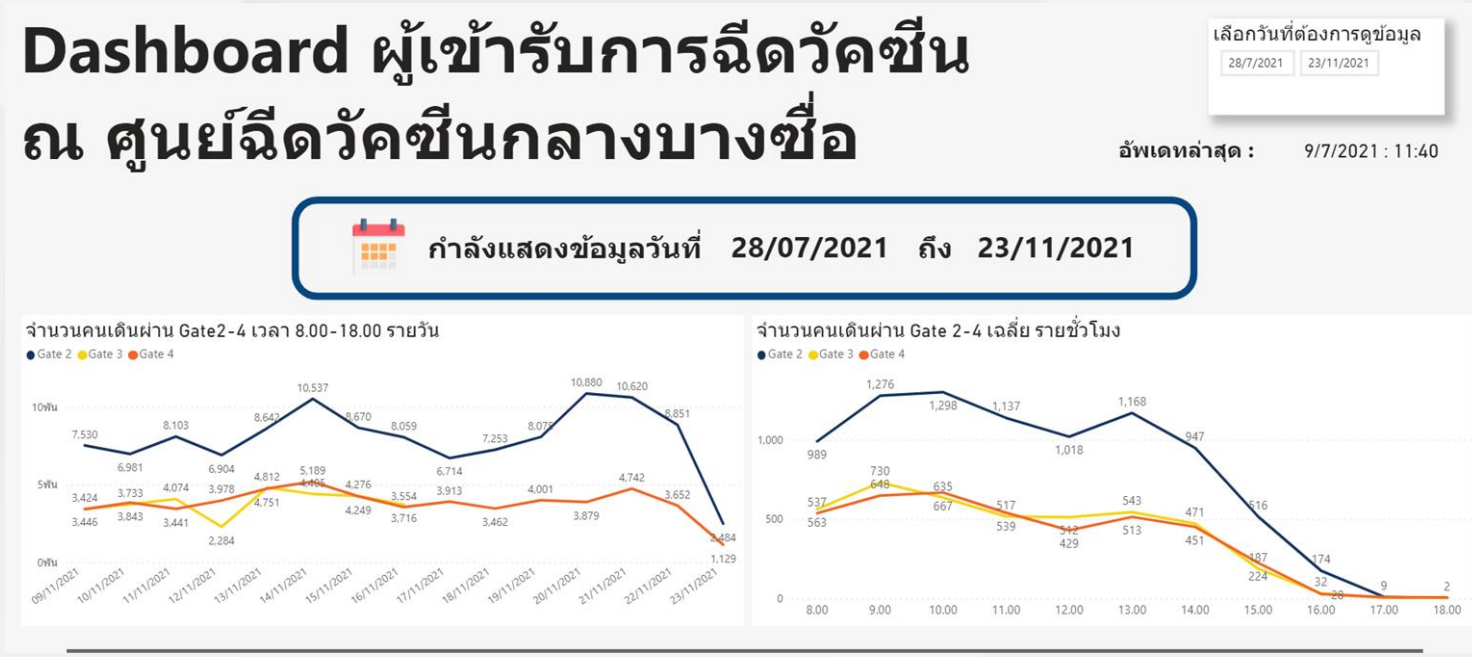
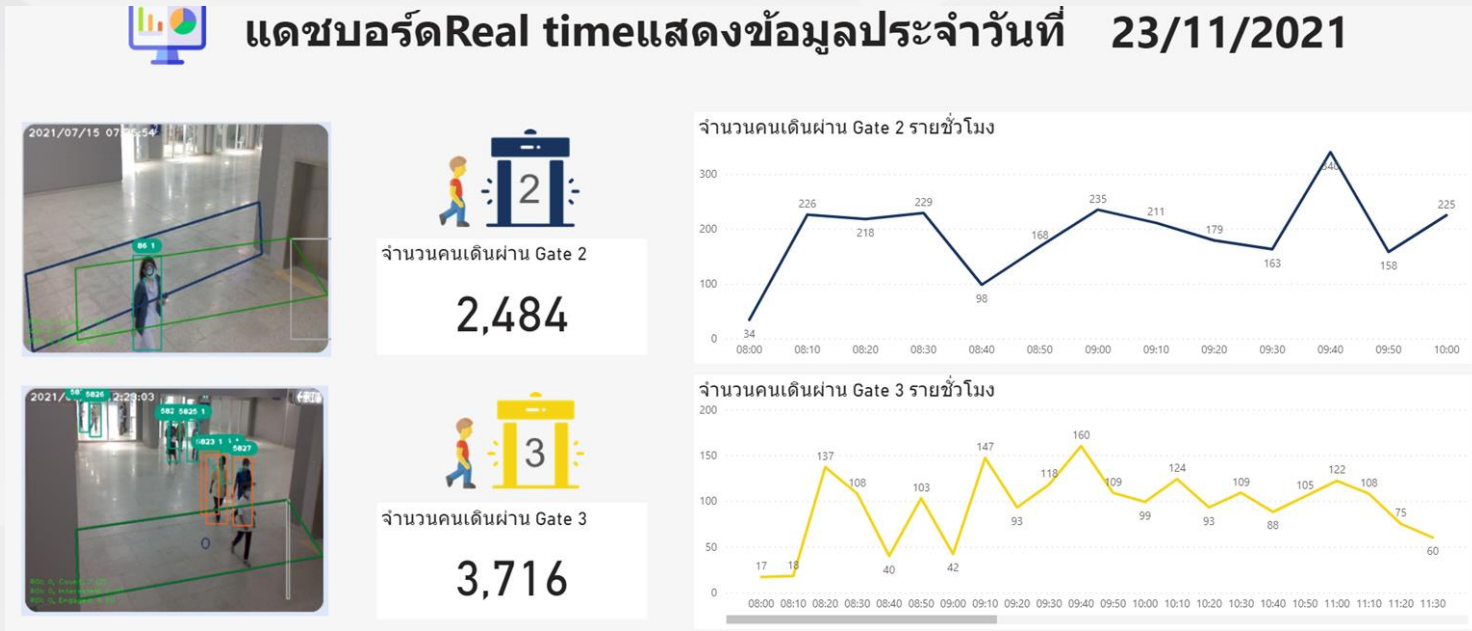
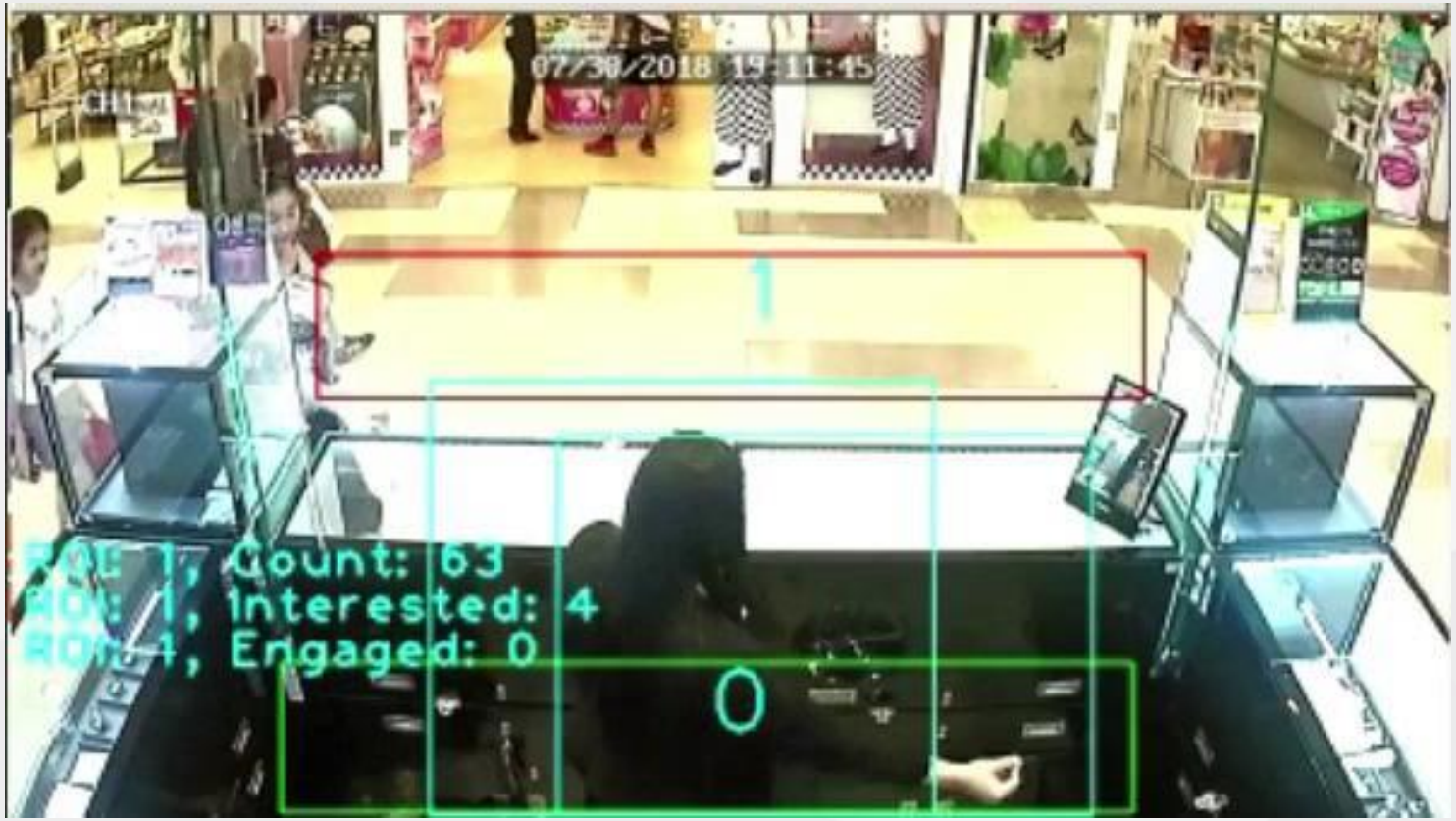




RETAILER

Store Conversion (Identiy level of engagement):
Passerby, Interest, Engage



Use AI for Store Purchase Funnel Completely

Pass By (How many people in the store. If the number is low, this implies location problem)

↓

Interest (If the number is lower than Pass by, this implies the store may not being attractive)

↓

Engage (If the number is lower than Interest. This implies product in the store is not interesting enough)

↓

Actual sale (Once you know traffic funnel, you will see the real cause of decresing sales)

- Count people who pass by store
- If a person stops and look at the promotion in the limited time e.g. 10 sec, it will consider that the person is interested in product
- If this person stays still more than 30 sec, it will consider that the person certainly have engagement with the product. This suggested that the staff should close the deal.

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Staff Engagement (Using Uniform Detection)

*Time & cost consuming for development

Using for Retail Operation and Compliance: camera can be determined customer and staff by staff uniform

- Evaluate sales performance via how attentive staff is approaching customer (Staff = wearing grey apron in the right corner)
  - Attend in Green = approaching time,
  - Attend for Blue = spending time with customers

- For example, when customer enter into the store, (step from ROI0 to ROI2) the staff should approach the this customer with 20 sec. If there is no staff, system will alert to the store manager immediately.

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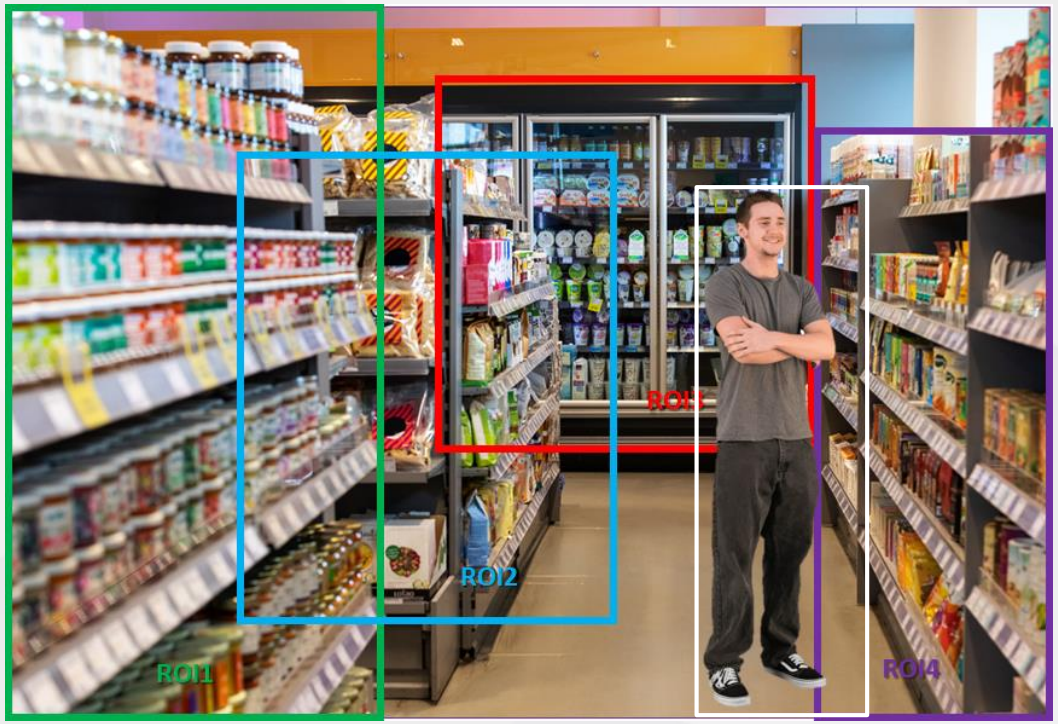
Shelf/Display Engagement



To analyze which shelf/ display customer interested the most. (Able to see data via heatmap analysis)

In pic: Customer ID 170 spends time with shelf ROI1 for a while, so that our AI considers this action as Interest and turn to Engage

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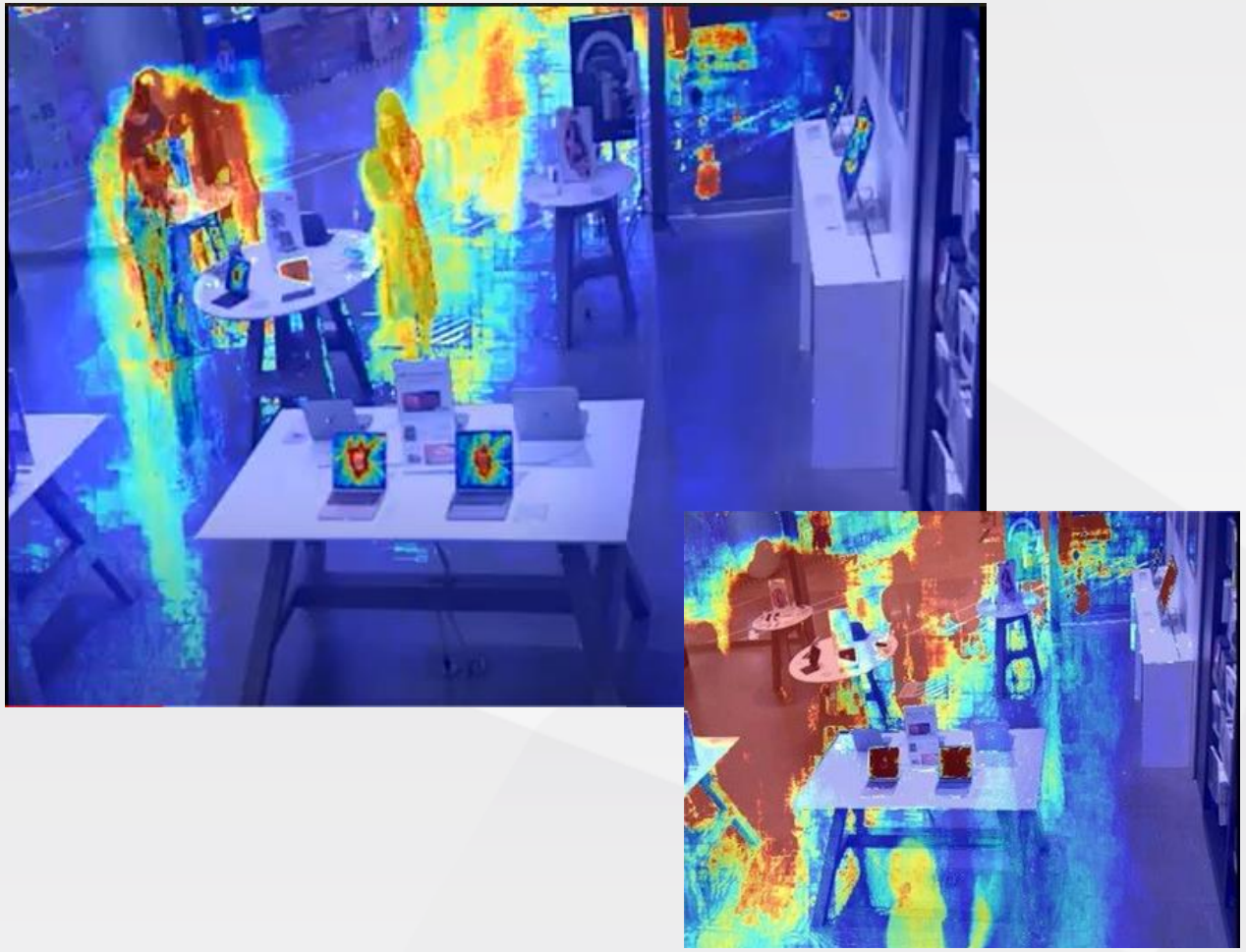
Heat Map



Hot zone and cold zone can be easily detect using Heat Map capabilities

In this picture,

- Above left hand side : there are lot of traffic in this zone
- Below down left hand side : there are a bit traffic in this zone
- On the right hand of the shop : There is few traffic zone, meaning that the shelf is not interesting → have to re-adjust the shelf, make area as a promotional area

This results can help marketing/ store layout team plan the effective promotion area by using heatmap data

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Customer Path Tracking

- Camera will be tracked which direction people walk from and walk to in order to figure path tracking
- Seeing customer's entering direction can be using for strategy planing e.g. sales booth, promotion booth, or planing for advertisement

In pic: A man is walking from 0-->1-->2

Queue Management

If people standing in ROI2 for a long time, meaning that it has a queue to take some action

Camera will detect people once they are waiting for queue over the limited area **(ROI2)** then alert store manager to open more cahier to manage the queue and to reduce time waiting and improve customer experience

ROI1 = long queue, ROI0 = medium queue, ROI2 = no queue,
long queue = ROI is changed from red to yellow

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Stock Out Detection

- Camera detect product on shelf and check if the product is missing out and alert team to refill the stock in order to prevent sales loss opportunity and decrese manpower for checking often time

Camera detect empty area on shelf via color element
Seeing the color elements of shelf that have empty area is different from the shelf fulled of products
(In pic: the portion of black in grid is much more than the portion of other products)

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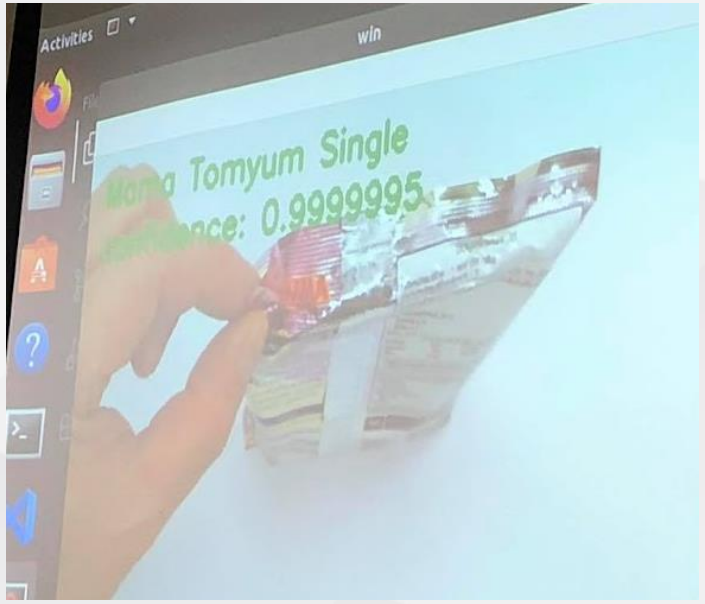
Trolley & Basket Detection

Camera will detect the area where the trolleys or shopping baskets are located.

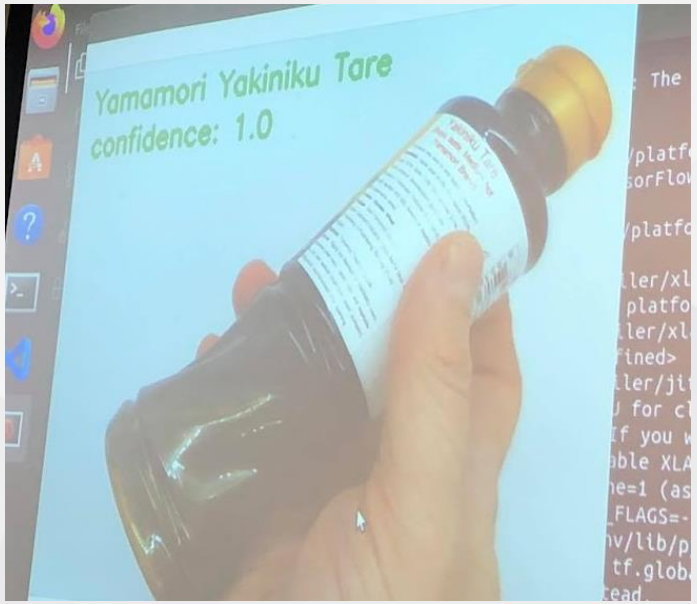
If it is out of stock (less than the ROI), then alert to store manager to refill immediately for smoother shopping experience

Product Identification when checking out

BVA is able to identify product in each SKU using training data in many product's angle



In this picture, it is detected as a **MAMA Tomyum** at 99% accuracy



In this picture, it is detected as **Yamamori Yakiniku** at 100% accuracy

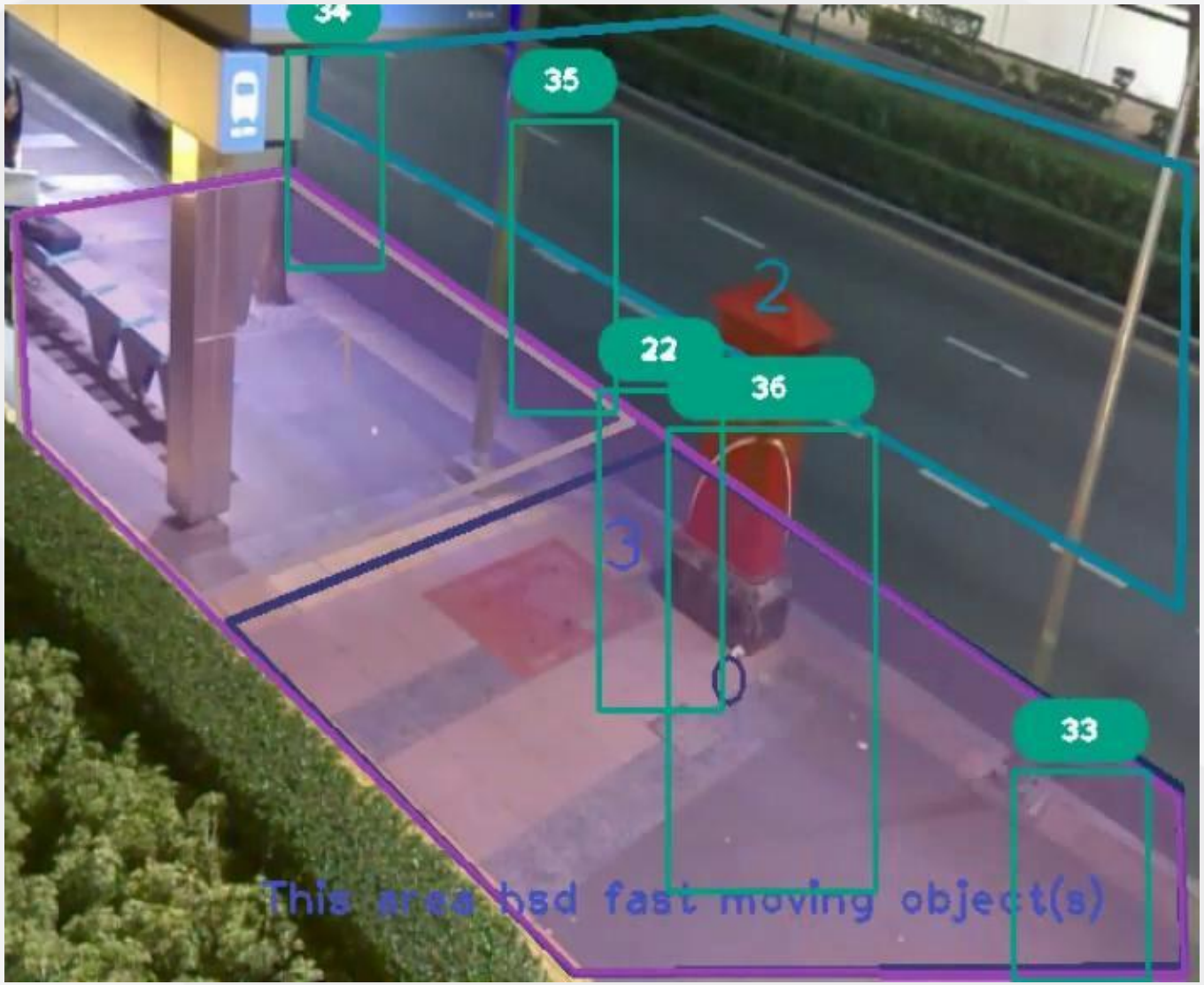
SAFETY & SECURITY

Detect and record crime

Our AI works well night and day

Able to detect snatching or people move at suspicious speed

Platform will take snap shot and alert related authority in real-time



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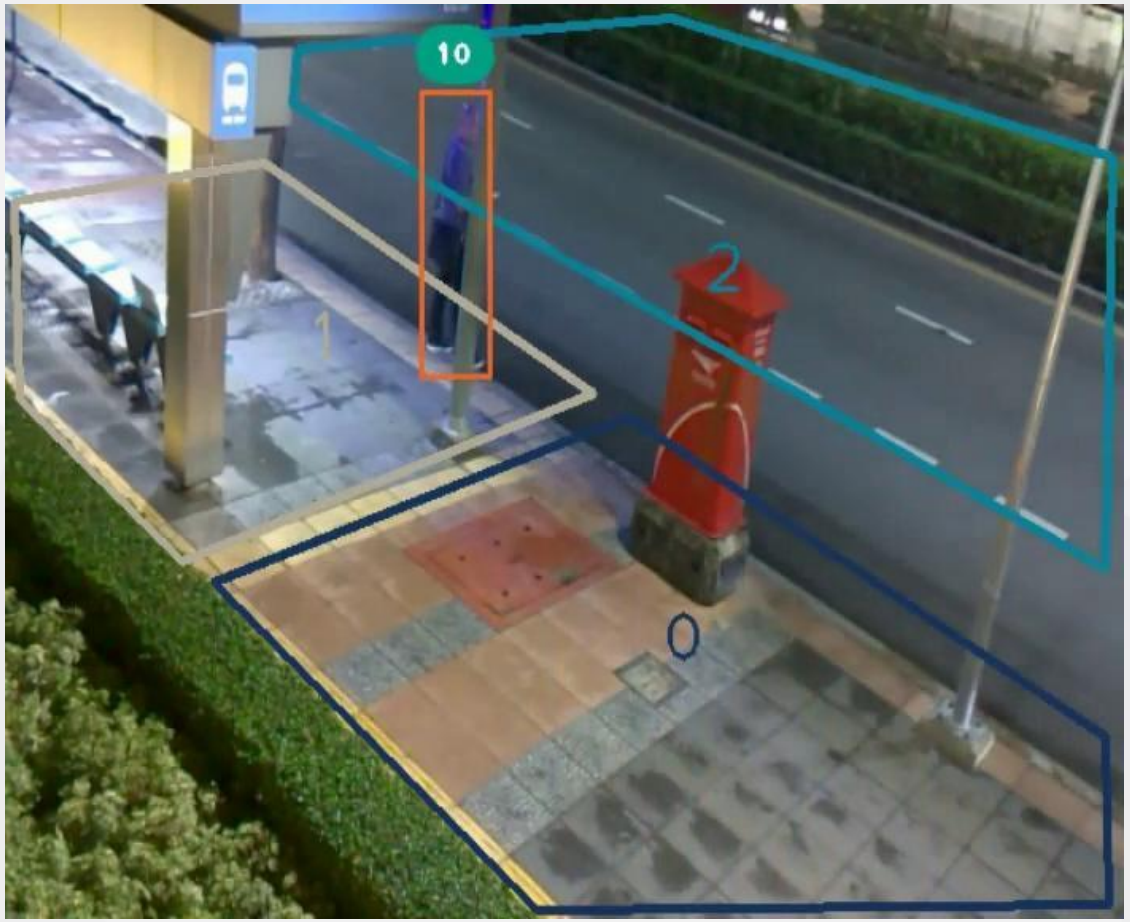
Ensure Civilian Safety

Alert if female suddenly being surrounded by many males



Alert if human is detected on the road during restricted hour

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Alert suspicious activities

Alert suspicious gathering during the night hours

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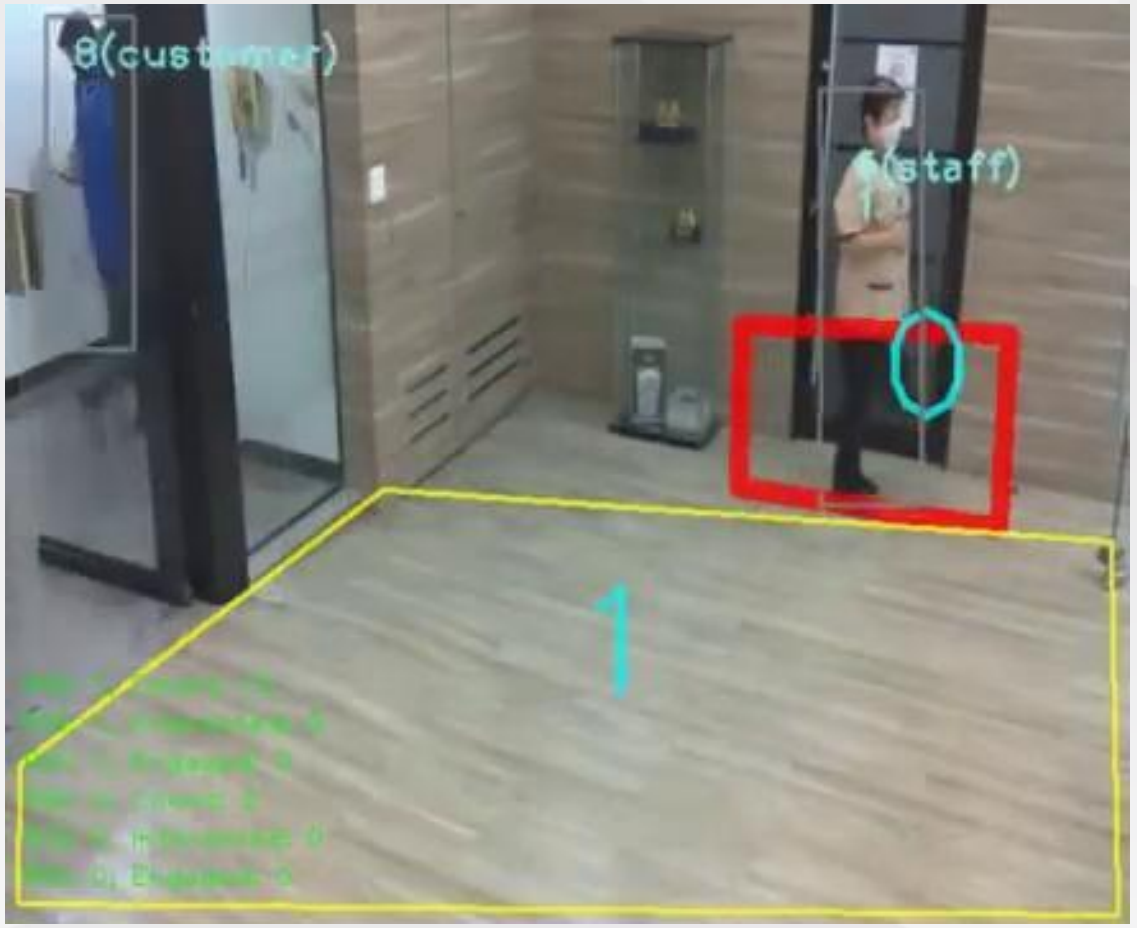

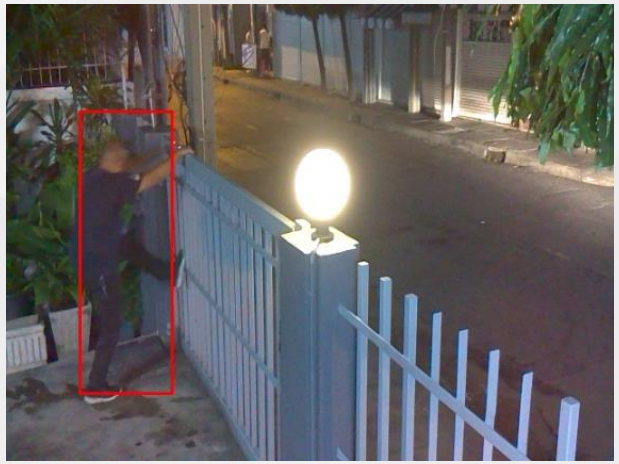

Intrusion Monitoring and Alert

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Suspicious Object Detection

If there is some suspicious object on the floor, system will send alert to assigned team to take action immediately

ROI will turn from blue to pink

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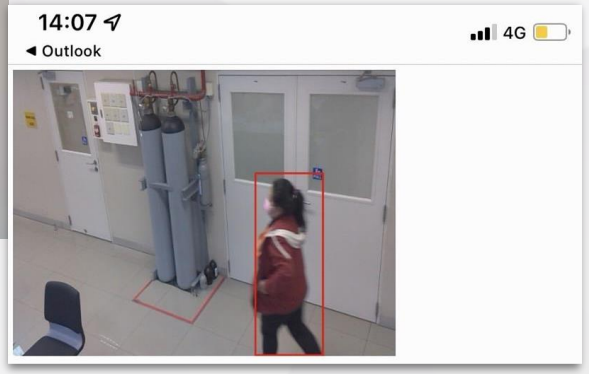
Staff Detection by Uniform

Accessing in control room, it is required to wear an assigned uniform (Yellow and Orange ones)

If there is anyone else come into the room without assigned uniform, system will alert and capture incident and send to team



Uniform Detection (PPE) for Production Line

```
{
    "ppe":"True",
    "ppe_detail":{
        "hair":"pass",
        "glasses":"pass",
        "armcloth":"pass",
        "earplug":"pass",
        "shoe":"pass"
    }
}
```

```
{
    "ppe":"False",
    "ppe_detail":{
        "hair":"pass",
        "glasses":"fail",
        "armcloth":"pass",
        "earplug":"fail",
        "shoe":"pass"
    }
}
```

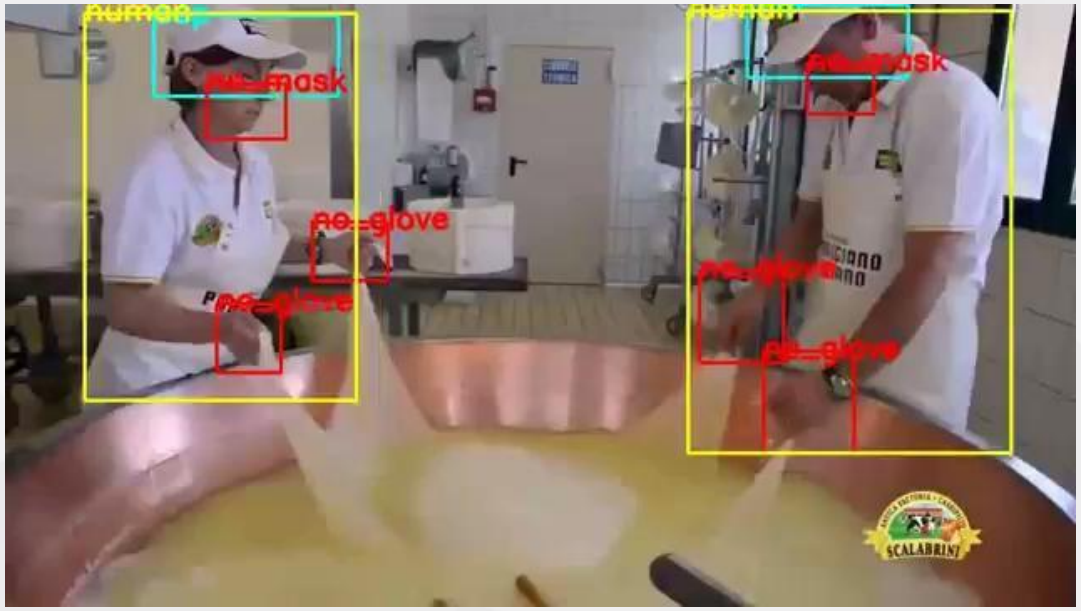
```
{
    "ppe":"False",
    "ppe_detail":{
        "hair":"fail",
        "glasses":"fail",
        "armcloth":"fail",
        "earplug":"pass",
        "shoe":"pass"
    }
}
```


Working in production line must be well dressed

- Hair
- Glasses
- Armcloth
- Earplug
- Shoe

AI is able to detect people who are working if they comply the uniform policy or not

Uniform Detection for Production Line



Working in production line must be well dressed

- Hair
- Glasses
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- Earplug
- Shoe

AI is able to detect people who are working if they comply the uniform policy or not

Restricted Parking Area Detection

In front of the entrance of warehouse
Green ROI is prohibited area

If there is any vehicle parking in front of the entrance (let's say ⅓ of ROI), system will send alert to team to take an action

Flare Detection

- AI will detect flare in real-time (e.g. within 3 seconds) with sending incident to assigned team

Flood Detection

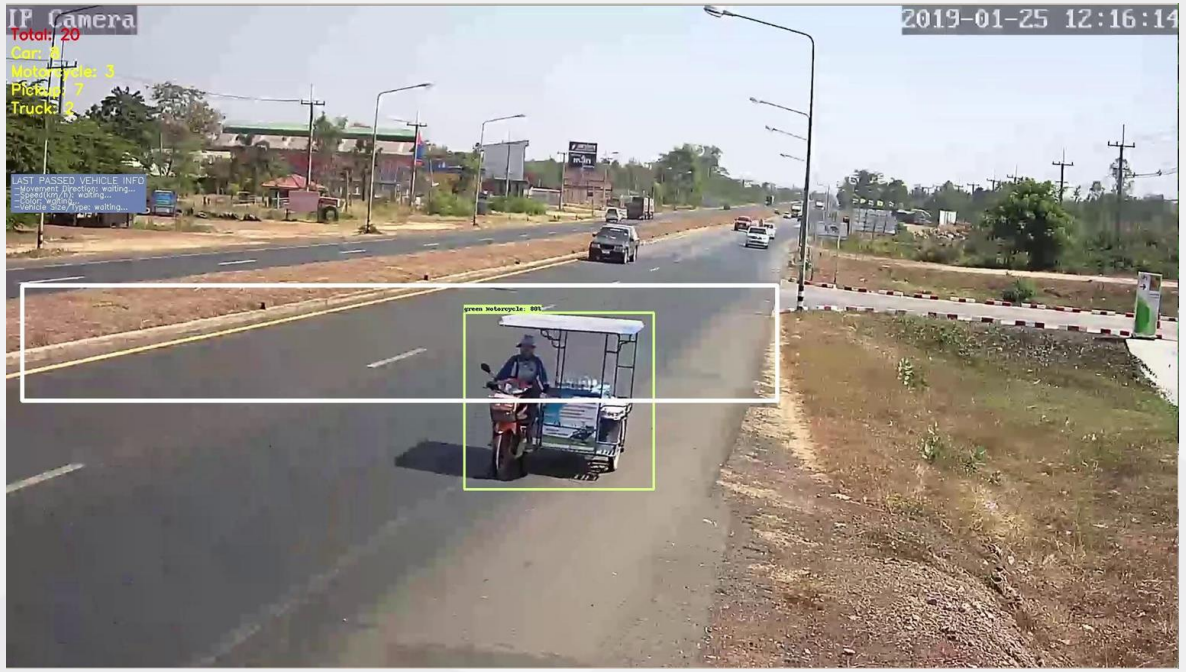
AI will detect flood by capturing glossy of surfaces and calculate as a percentage of total area. If it exceed the setting, system will alert to relevant team

Forklift Detection

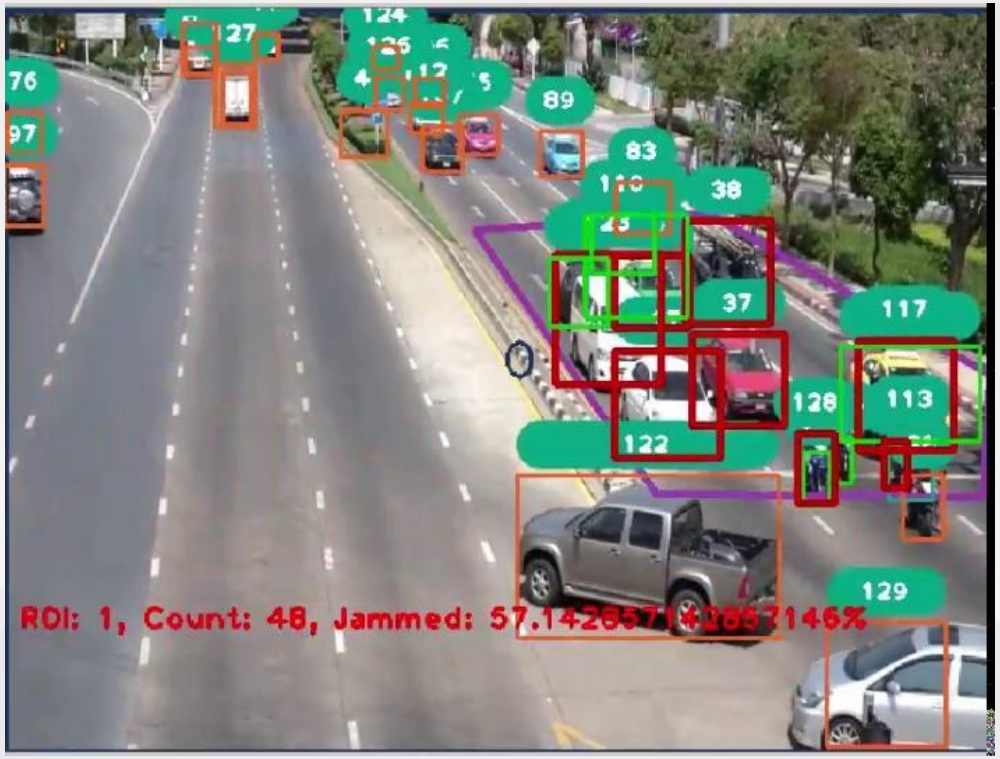
- If there is a human around forklift and tractor that is working, system will alert to assigned team to take an action immediately to prevent the accidents

VEHICLE (SMART PARKING/ TRAFFIC)

Vehicle Classification/ Traffic Control



- Count number of passing car in interested area (display in red letter on the upper left corner)
- classify type of car (car truck van tractor) (display in yellow letter on the upper left corner)



- Detect traffic jam on each road
- If cars fully enter into ROI1, the ROI frame will be changed to red and alert that the traffic is jam with Jam Index is at 55%

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Parking Spaces Availability

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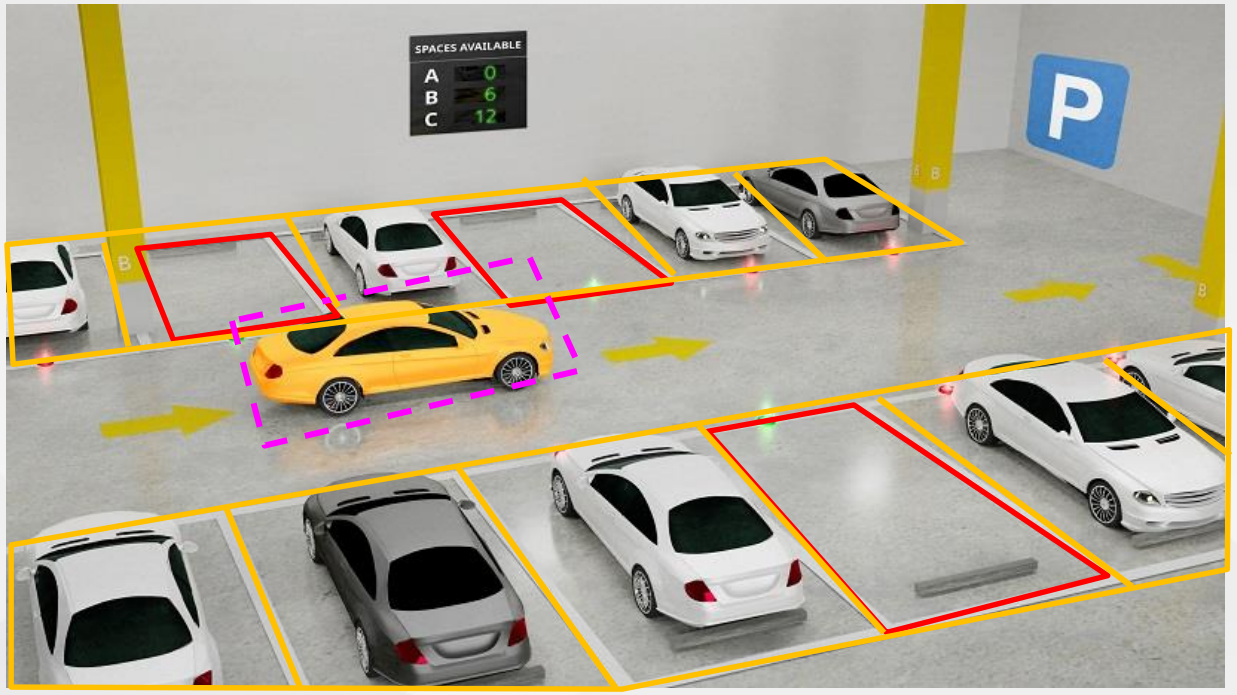

- Detect a free spaces in ROI, and send the data to be shown in the system without using any censor which is costly
- Be able to detect double parking in prohibited areas, then alert to security guard to handle just in time

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Restricted Parking Area

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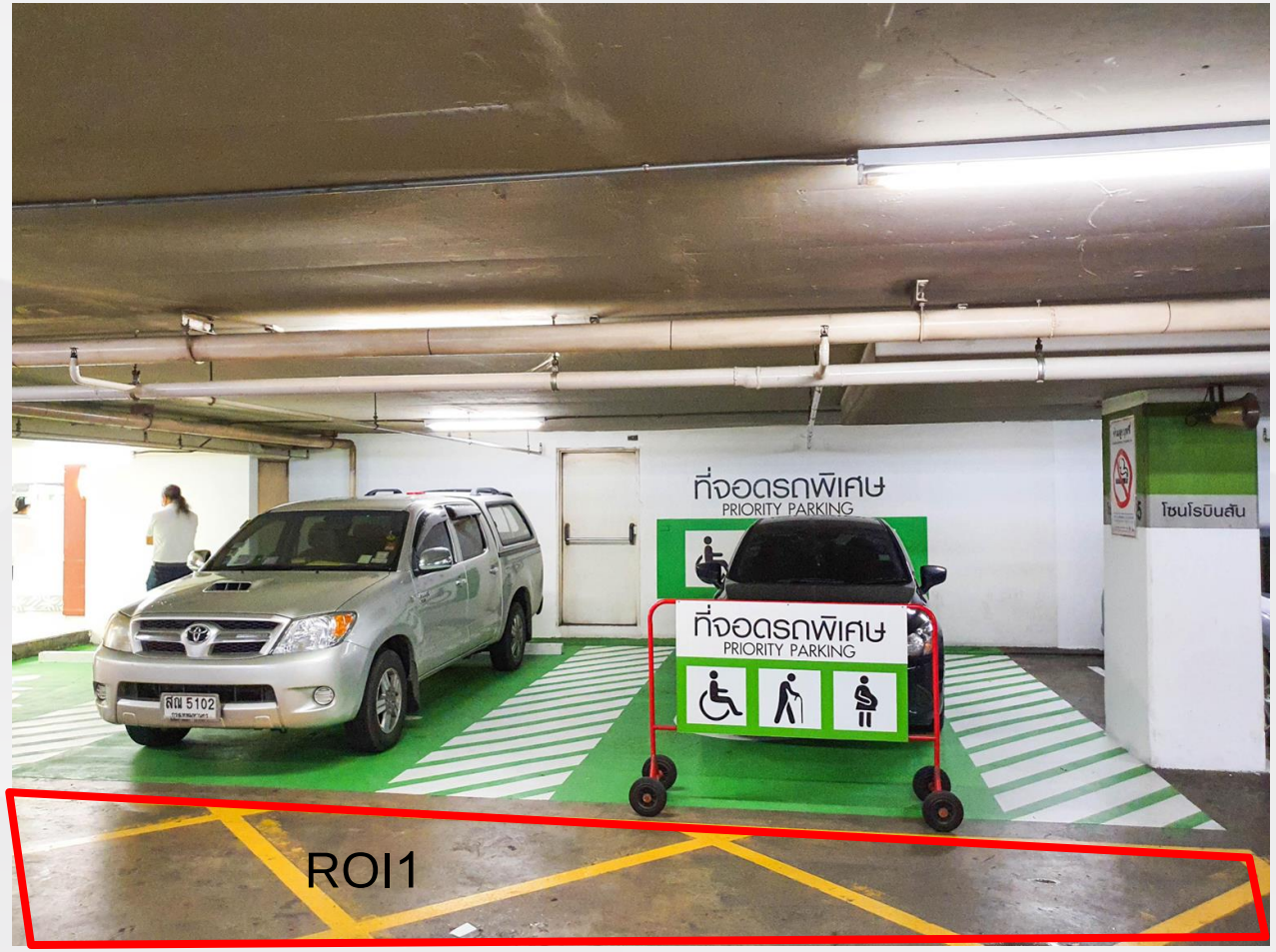
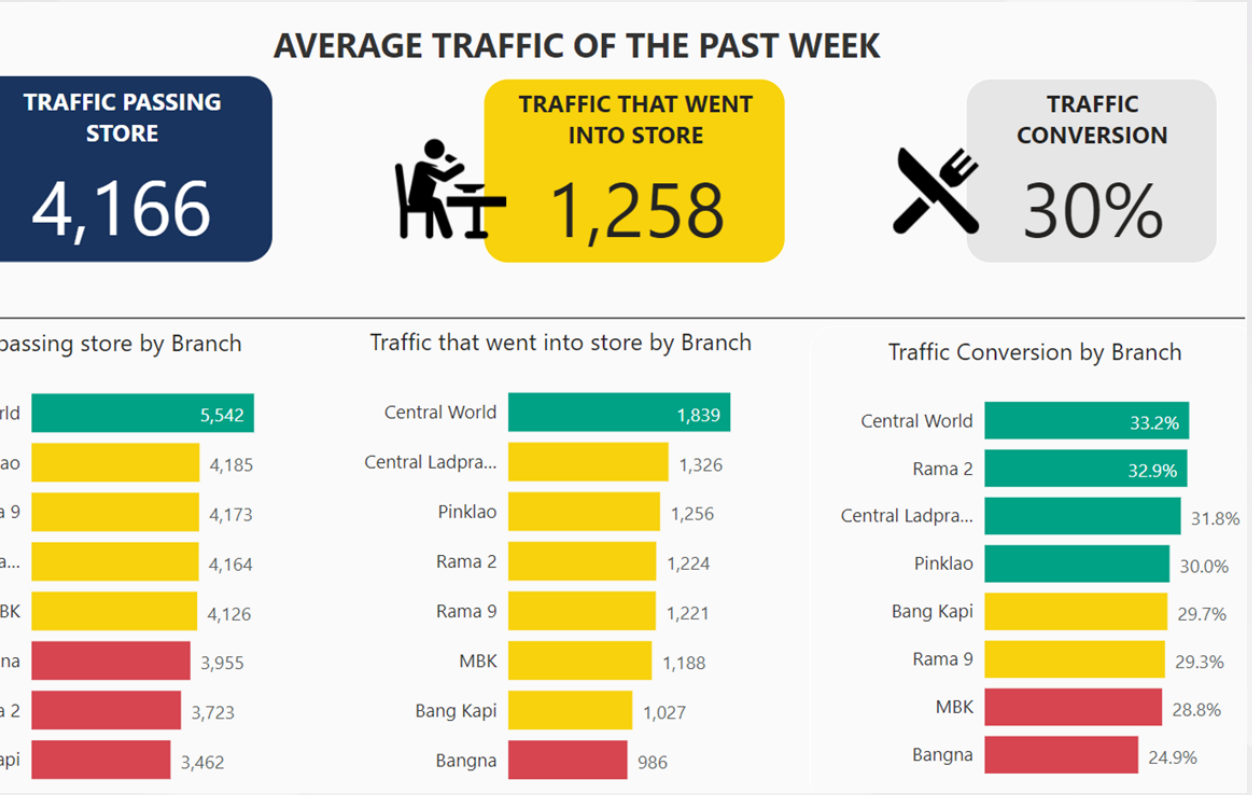
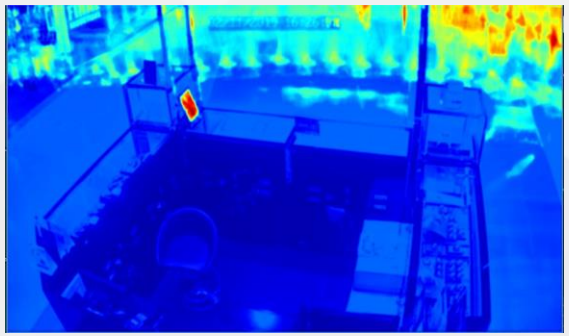
- AI detects when there is a car parking in prohibited area (ROI1) and also capture the incident and send to security guard to take action







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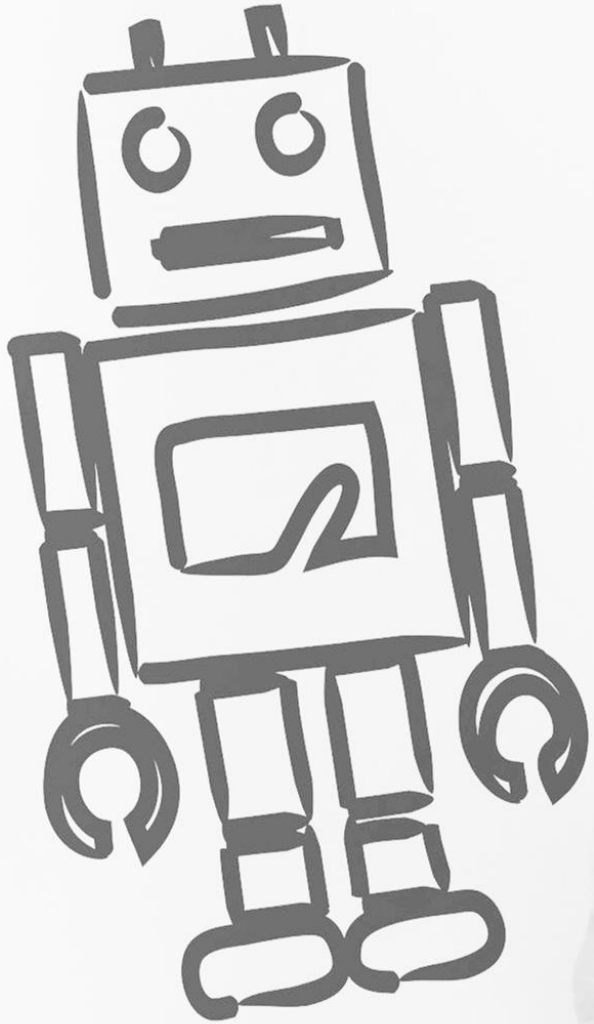
Come with powerful business performance real-time reports

- All camera with different functions can be sync into one report
- Report can be customized and include external data like sale transaction or marketing calendar
- Can specify which user will see what information



THANK YOU

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