



# Into the Deep III

DELVING INTO DEEP LEARNING,  
ANALYTICS, & THE NEWEST RELEASE  
OF THE AI BOX

MAY 23, 11 AM EST

# Speaker & Agenda

**Brian Denmeade** | Field Engineer & Master Tech Guru

“I am passionate about helping secure the world through educating others about the latest physical and digital security systems.”

## I. Deep Learning & AI Analytics

1. Defined
2. Impact in Security

## II. The All-New NDAA-Compliant AI Box V2.0

1. The Next Generation of AI Convenience
2. Applications
3. Object Tracking
4. Pose Estimation
5. Multi-level Analyses
6. Industry Use Cases

## III. Q & A

# What is deep learning & how does it affect me?

Deep learning is a field of artificial intelligence.

It encompasses machine learning, where machines can learn by experience and acquire skills.

Deep learning can, and is, changing the future for every industry, especially the security.

It saves hundreds of hours worth of work by

- Scanning data much more efficiently
- Performing an action based on the information it finds

# What are AI analytics and how are they used?

AI-driven **security** analytics operate using predictive intelligence.

AI analytics collects data and provides risk analysis of the collected data.

- Offering predictive behavior analysis and enabling a proactive response

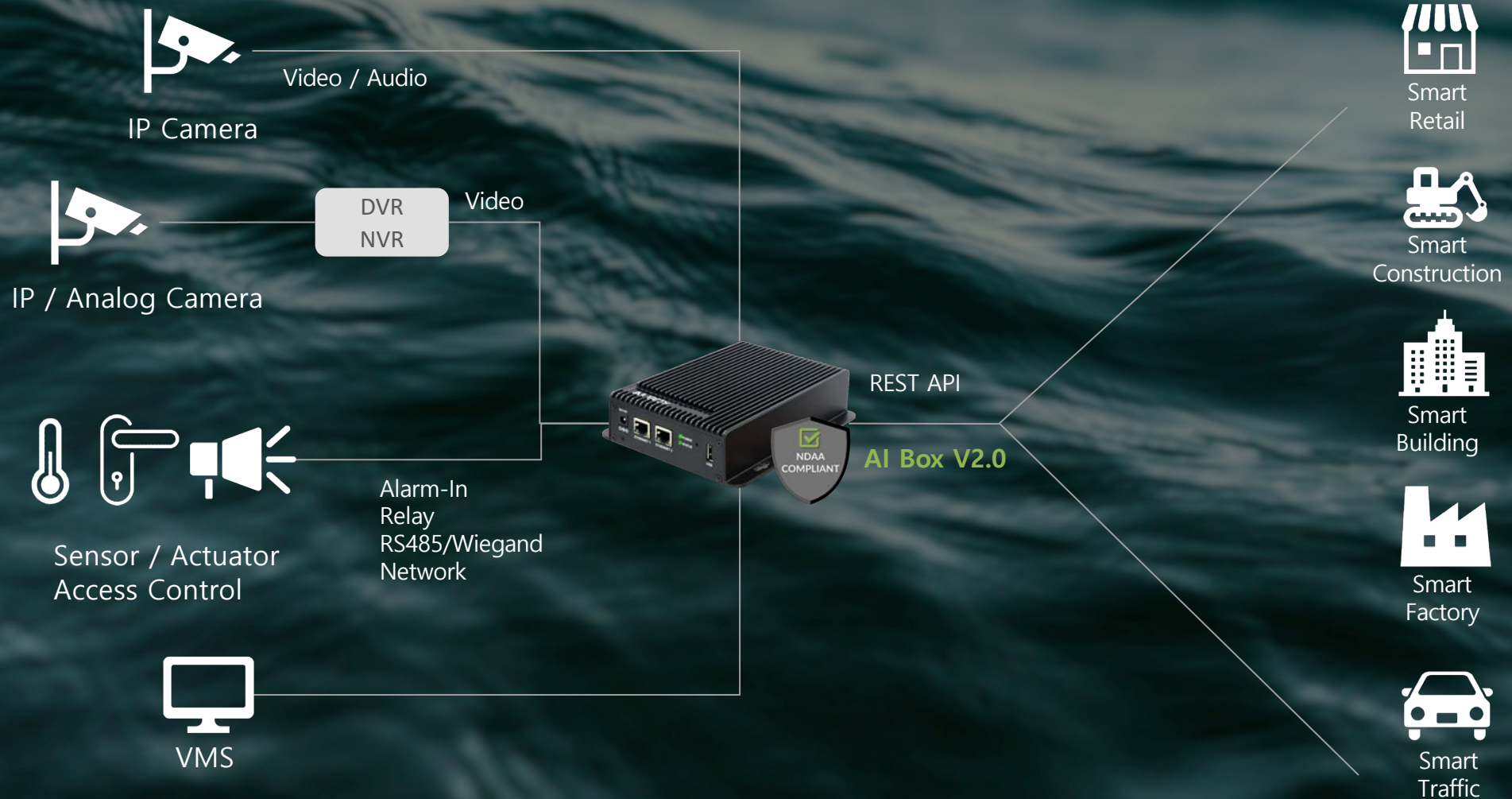
# What is predictive intelligence and how does that help me?

Predictive analytics or behavioral analytics data discovered via artificial intelligence can be used to predict an individual's future behaviors.

Recent technologies such as our AI Box have tapped into behavioral analytics for responsive monitoring in retail, government, construction, medical, and other industries.

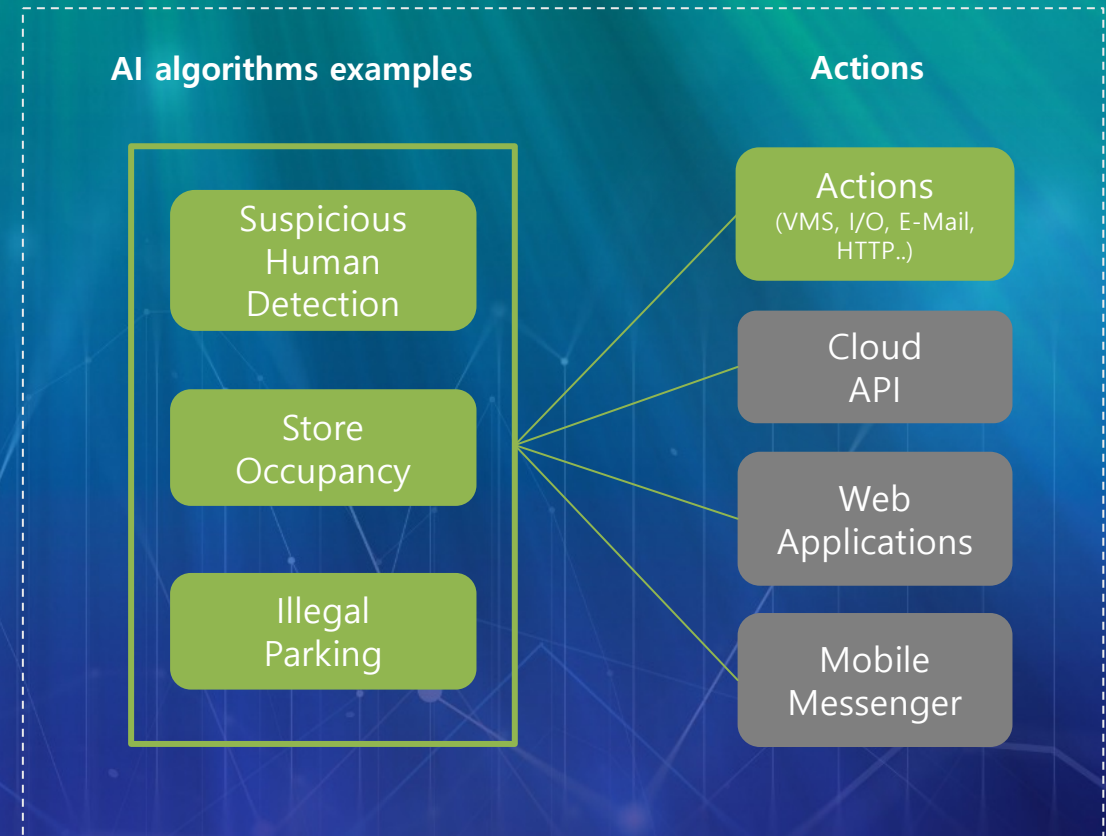
Physical security is evolving from reactionary and defensive to proactive, with **AI Technology** being integrated into almost every platform.

# AI Box V2.0 *The Next Generation of AI Convenience*



# AI Algorithmic Architecture

- Agnostic Technology
  - Offering easy installation & integration
- App AI-specific false alarm handling
- Additional detailed analysis via
  - Pose estimation
  - Advanced object tracking



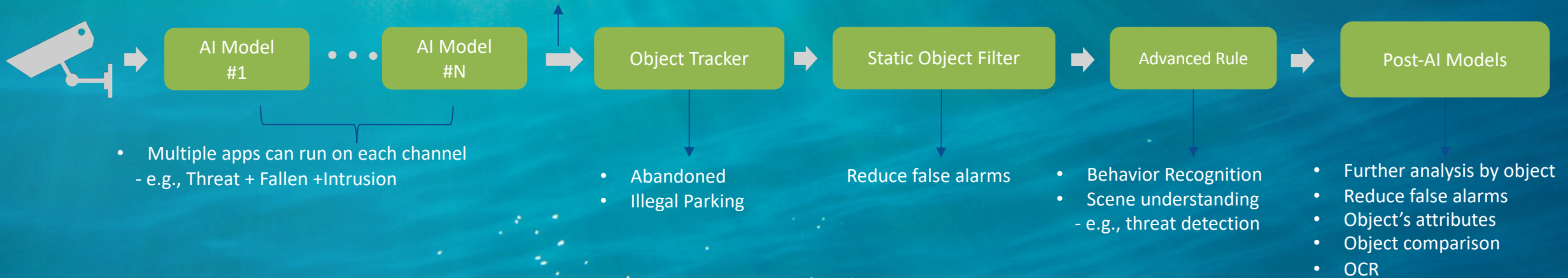


# AI Algorithmic Processing

AI Box V2.0



- AI Detector
- Pose estimation
- Background / Foreground



*AI algorithmic processing refers to the use of algorithms and mathematical models to process and analyze large amounts of data in order to make predictions and decisions.*

# AI Algorithmic Standard Licenses

Includes the Standard Package

<b>Standard Package</b>	Dynamic Privacy Masking
	Basic Attribute (Color of Clothes) - Q2
	Queue Management - Q2
	Standard Heatmap - Q2
	Intrusion
	Loitering
	People Counting
	Vehicle Counting
	Zone Counting (Zone Occupancy)
	Virtual Fence
	Stopping Detection
	Stay & Go (Enter & Exit)
	Occupancy Counting

Standard Package included with AI Box V2.0

# AI Algorithmic Pro Licenses

Offers the Pro Package  
- An optional upgrade

Pro Package	Crowd Detection
	Advanced Visitor Analysis
	Intentional Body Gaze Detector
	Hand & Foot Intrusion
	Imminent Threat
	Fallen Person Detection
	Animal Detection
	Vehicle Type Counting (BUS, Truck, Other Cars)
	Thermal (Human) Detector - Q2
	Drone View - Q2
	Advanced Attributed - Q2
	Fisheye - Q2
Corridor Mode - Q2	



# AI Algorithmic Add-on Licenses

Offers:  
 Add-on licenses  
 - Per Ch. or bulk options  
 Requires Standard or Pro license

<b>Per-channel Add-on Licenses</b>	LPR (US, EU, JP, KR)
	Advanced Heatmap – Q2
	Helmet Not wearing
	Safety Vest Not wearing
	Illegal Parking
	Illegal Dumping
	Violence (Fighting)
	PTZ Auto Tracking – Q2
	Combine Counter
	Human Prolonged Stay

\*Preliminary List - APP name or level may be changed



# 16 Channel extension mode

Offers an extension mode

- Extending the standard 8Ch's to 16Ch's

The 16Ch extension mode cost

- AI resources are halved
- Available licensing is reduced
- Pro licensing is inaccessible
- Add-on licensing is inaccessible

<b>16Ch available AI Applications</b>	Intrusion
	Loitering
	Virtual Fence
	Stay & Go (Enter/Exit)
	Stopping Detection
	Zone Counting
	Occupancy Counting
	People Counting
	Vehicle Counting



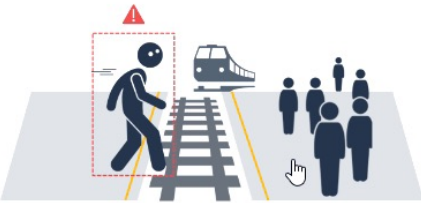
# Intuitive & Easy-to-use AI Applications



Device 2AD130 admin

All (27)

**Intrusion Detection**

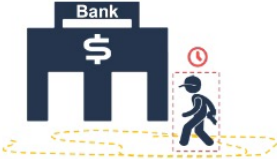


Detect people in no-entry zones, send notifications, and configure various other actions.

8 CH **Activated**

Trial activation

**Loitering Person**




Detect people loitering in certain areas. It can enhance security by detecting behaviors suspiciously.

8 CH **Activated**

Trial activation

**Virtual Fence**




Set up virtual fences near key assets or facilities to monitor at all times and proactively detect intrusion attempts.

8 CH **Activated**

Trial activation


**Stay & Go**



Detect objects that stay in and out of the surveillance zone for more or less than a certain amount of time.

8 CH **Activated**

**Stopping Detection**




Detect people and vehicles that have been stationary for a certain period of time.

8 CH **Activated**

**Zone Counting**

Object count: 3  
Event count: 34



Set up zones and determine real-time occupancy. Events can be set according to the number of people in the zone.

8 CH **Activated**

\*Preliminary List - APP name or level may be changed

## *Cutting-edge Edge AI Technology*



Highly-accurate **object-tracking** technology



High-performance **pose estimation** technology



**Reduce false alarms** through automatic scene understanding



Multi-faceted, multi-level analysis of **detected objects** and video

# Highly-Accurate Object-Tracking Tech

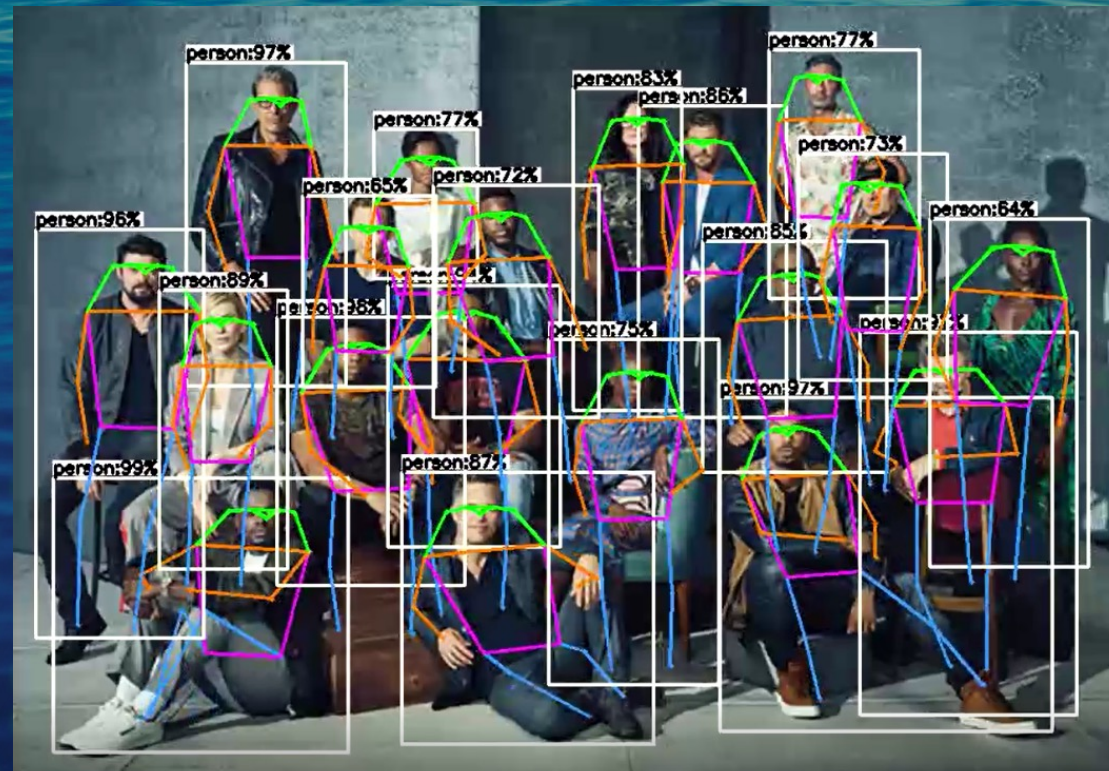


- Abandonment Detection in an environment where people pass by
- An unspecified object can be detected without pre-training



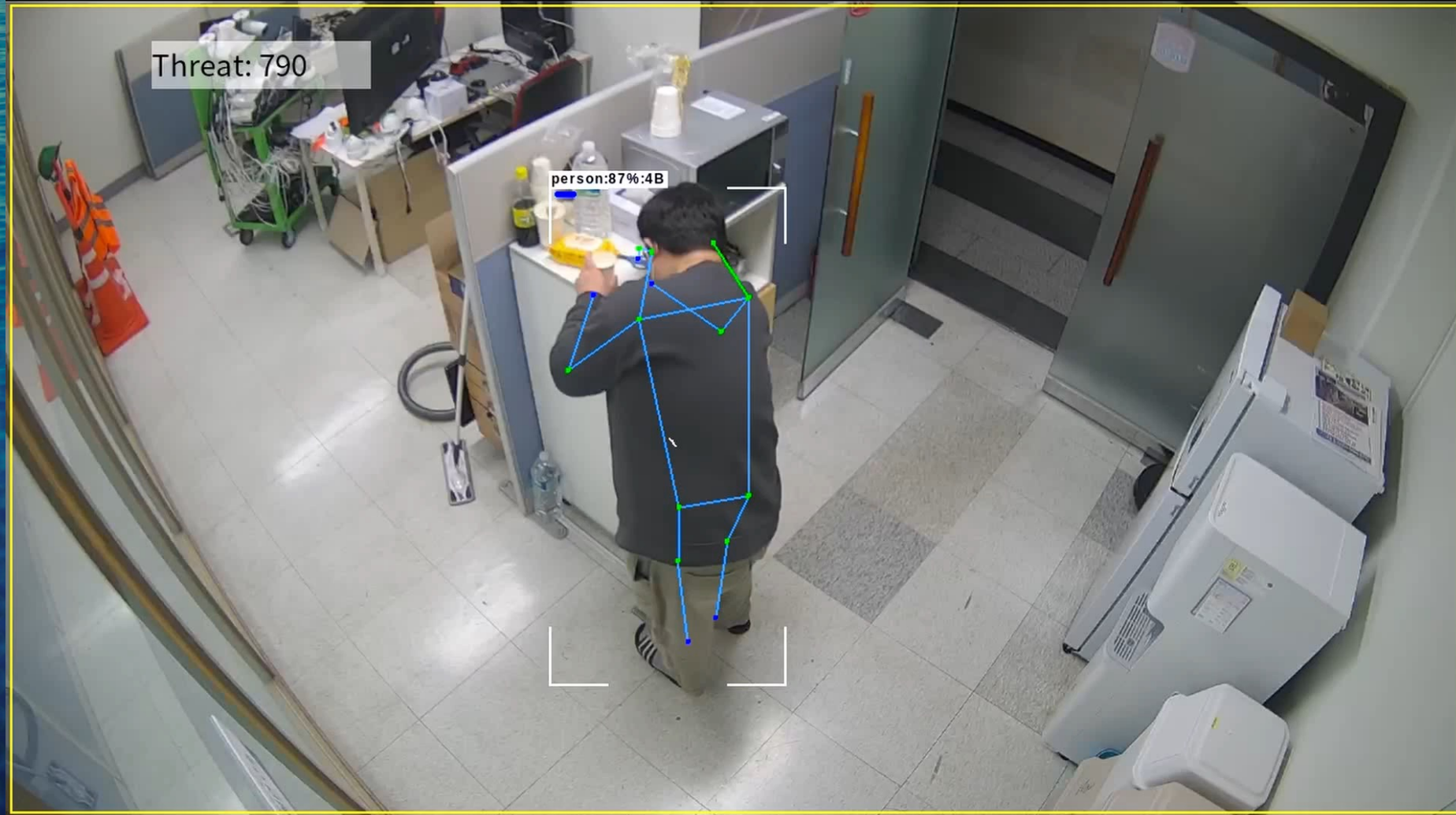
# High-Performance Multi-person Pose Estimation

- New pose estimation algorithm detects exact body joint positions and gazes, even when people overlap.
- This technology can predict human intentions and analyze behavior more accurately.



# High-Performance Multi-person Pose Estimation – Demo

- **Imminent Threat Detection:**  
Pose estimation



# AI Vertical Security Management



## Imminent Threat Detection



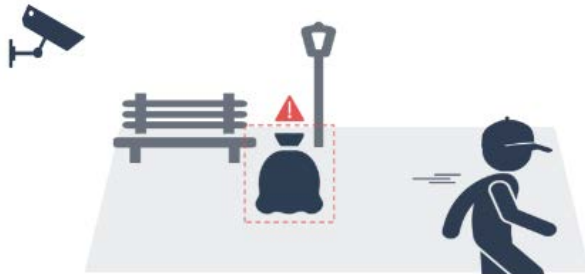
Detect threat situations through behavioral recognition and scene understanding technology.

## Suspicious Behavior



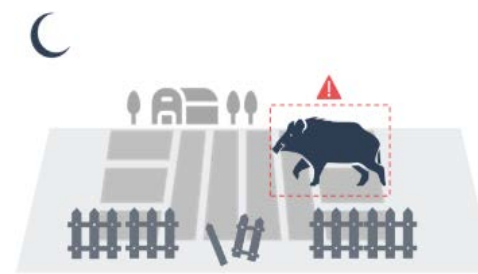
Suspicious behavior can be detected in advance based on behavior recognition.

## Illegal Dumping



Detect abandoned objects. It can be used for courier notifications, detection of dangerous goods or garbage dumping, etc.

## Wild animal



Detect animals suddenly appearing in surveillance area. Reduce property damage caused by animals.

# AI Vertical Security Management



## Illegal Parking



Detect illegally parked vehicles. Even if the target vehicle is temporarily obscured by passing traffic, it can still be detected.

## Intrusion Detection



Detect people in no-entry zones, send notifications, and configure various other actions.

## Virtual Fence



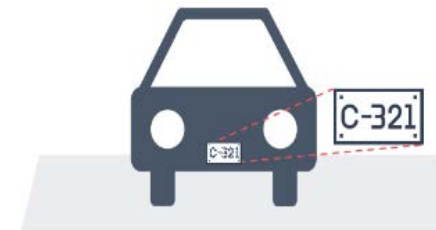
Set up virtual fences near key assets or facilities to monitor at all times and proactively detect intrusion attempts.

## Loitering Person



Detect people loitering in certain areas. It can enhance security by detecting behaviors suspiciously.

## LPR



Testing app for LPR-US

# AI Vertical Retail Management



## Occupancy Counting



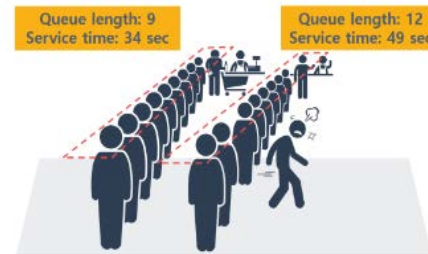
Calculates the number of people in the building by adding up entry and exit counts.

## Imminent Threat Detection



Detect threat situations through behavioral recognition and scene understanding technology.

## Queue Management



Check the number of waiting customers and the average processing time of waiting customers.

# AI Vertical Retail Management



## People Counting



Counts the floating population of a major area or counts the floating population of multiple areas by summing up.

## Crowd Detection



Set a zone from the camera image and understand the congestion level and frequency of the zone.

## Loitering Person



Detect people loitering in certain areas. It can enhance security by detecting behaviors suspiciously.

## Intrusion Detection



Detect people in no-entry zones, send notifications, and configure various other actions.

# AI Vertical Construction Management



## Suspicious Behavior



Suspicious behavior can be detected in advance based on behavior recognition.

## No Safety Helmet



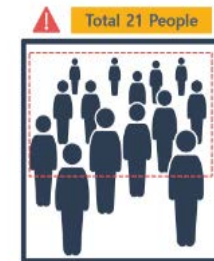
Recognizes those who do not wear helmets in the monitoring area and sends a warning message to those who do not wear helmets or to the manager.

## No Safety Vest



Recognizes those who are not wearing safety vests in the monitoring area and sends a warning message to those who do not wear safety vests or to the manager.

## Crowd Detection

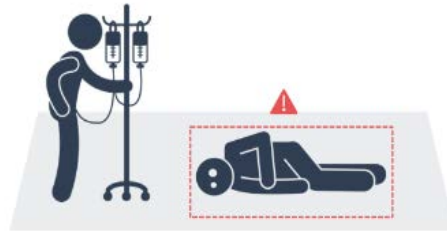


Set a zone from the camera image and understand the congestion level and frequency of the zone.

# AI Vertical Construction Management



## Fallen Detection



Real-time recognition of a fall and rapid propagation of an emergency can minimize human casualties.

## Loitering Person



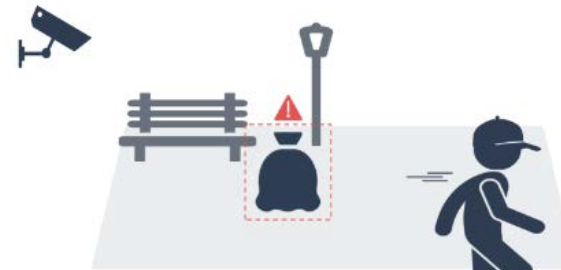
Detect people loitering in certain areas. It can enhance security by detecting behaves suspiciously.

## Intrusion Detection



Detect people in no-entry zones, send notifications, and configure various other actions.

## Illegal Dumping



Detect abandoned objects. It can be used for courier notifications, detection of dangerous goods or garbage dumping, etc.



# Q & A



**THANK YOU!**

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