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DEEP LEARNING AND AI

for Data Driven Decisions

APPLIED COMPUTER VISION

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CCTV FOOTAGE: UNEXPLOITED DATA SOURCE

Data collection with a minimal purpose

- Regulations are increasingly expanding the CCTV coverage in public areas and business.
- More and more hours of video are produced and stored without purpose or impact.
- CCTV systems are large scale investments used only in a reactive way.
- Video is now the most important and under analyzed data source.
- 500 Hours of video are being uploaded to Youtube every minute.

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PRODUCING VALUE FROM VIDEO STREAMS

Real-time Computer Vision Analytics

- **Insight-AI processes videos in real-time**, producing a large scale of different analytics.
- Real-time **monitoring** and **video analytics** of live video streams.
- Video streams **are integrated on centralized processing**, to produce comprehensive insights.
- More than **30 different analytics** for all kind of businesses problems and use cases

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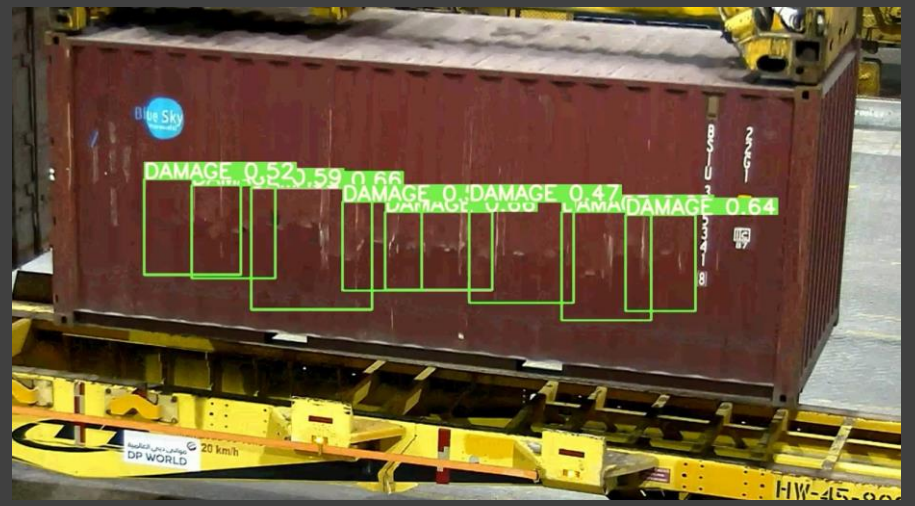
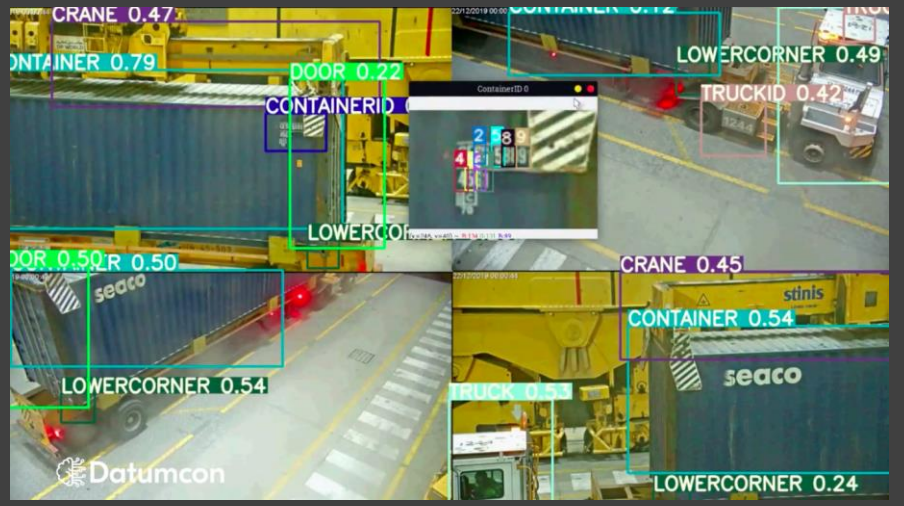
INSIGHT-AI: VIDEO ANALYTICS

Computer Vision to perform complex analytics

Real-time and automated detections on live videos, feeds or images, to trigger customized alerts or alarms.

- **Real-time** analytics, using computer vision.
- Deep learning **customizable** neural networks.
- More than **30 different libraries** than can be **concatenated** to solve complex business problems.
- **Feedback loops** to boost training and adapt algorithms to specific use cases.
- **Fast_API** (open source API framework) to handle any kind of API integration.
- **Insight-AI** can be **deployed as a Cloud** to serve end-users.





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CUSTOMIZABLE NEURAL NETWORKS

With specialized training and feedback loop

- Deep Learning Neural Networks based on **5+ different** architectures.
- **35+ different** and specialized trained libraries.
- **Unlimited number** of combinations and concatenations.
- **Fully customizable use cases**

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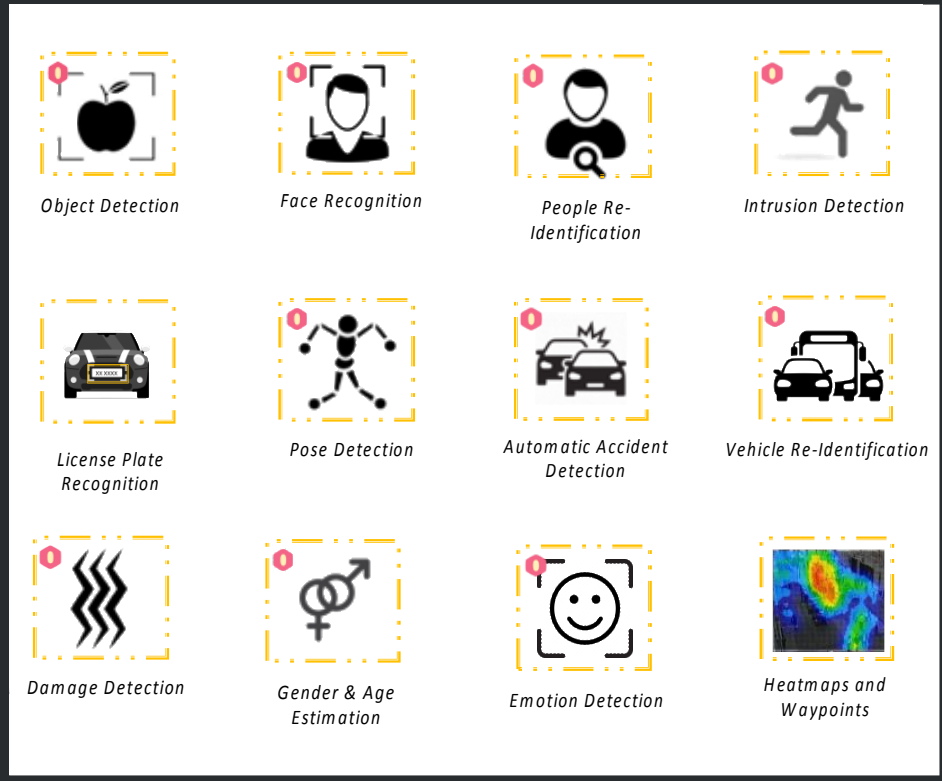

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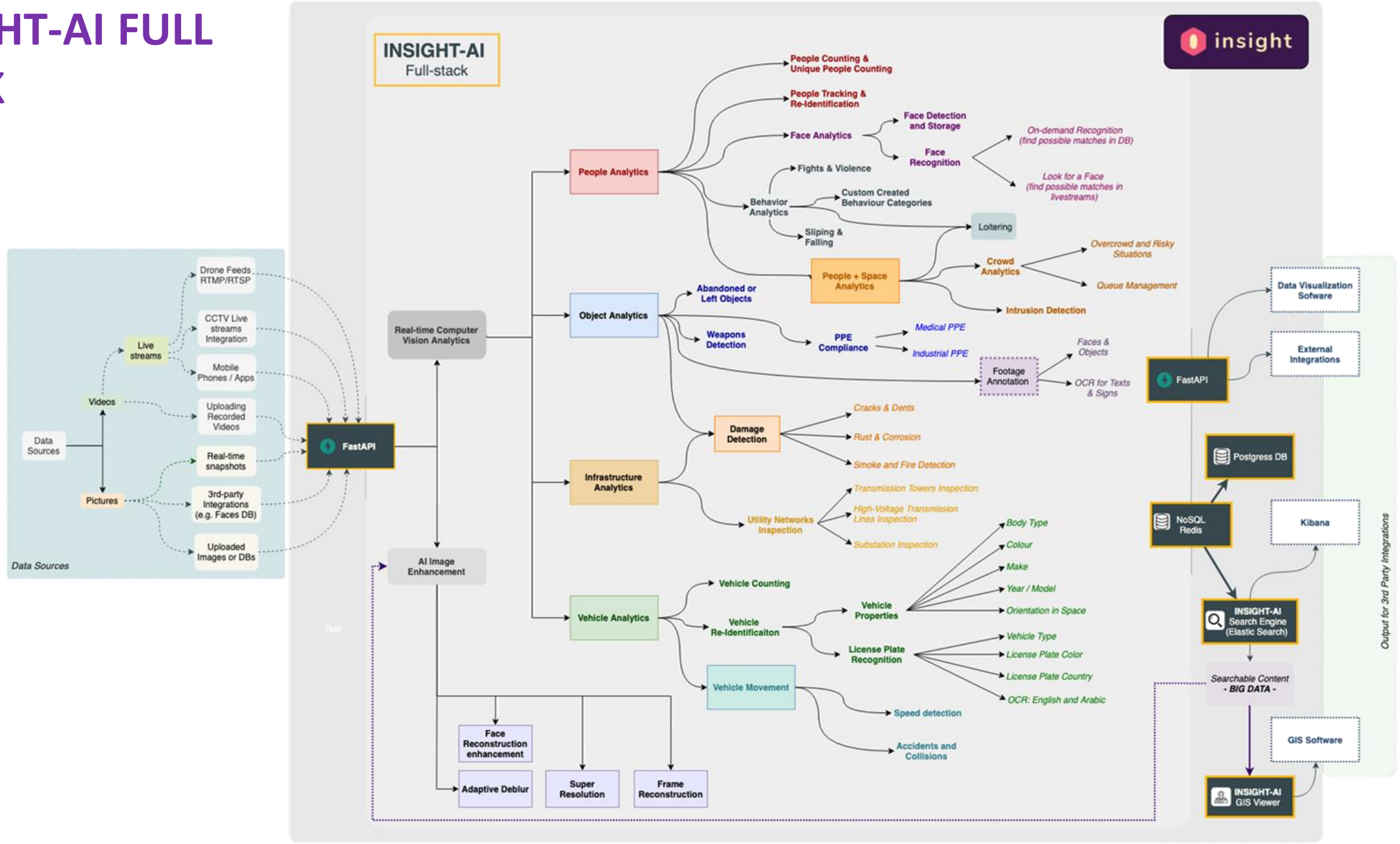
INSIGHT-AI FULL STACK



Airport

USE CASES:

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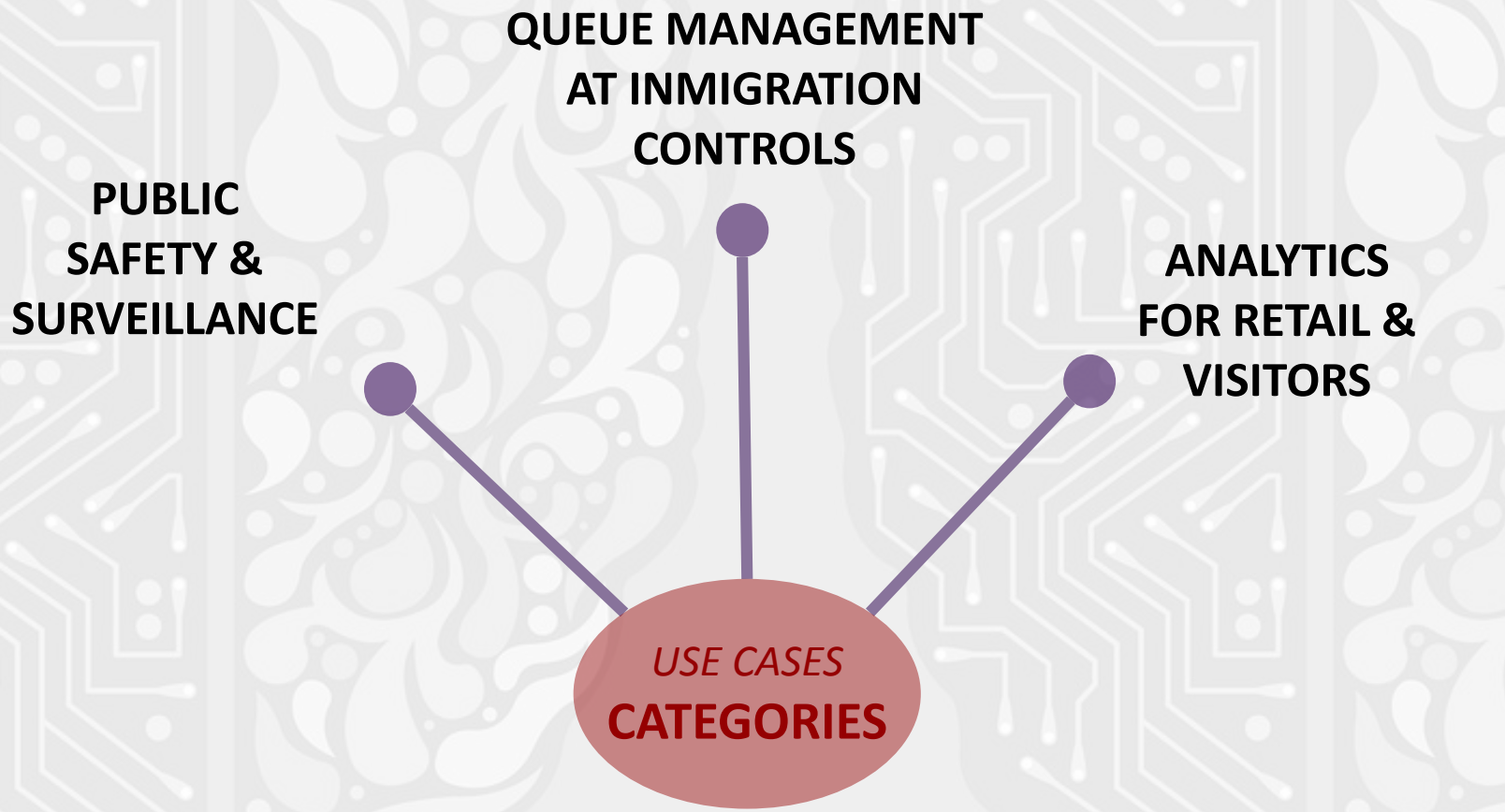
CUSTOMIZED USE CASES



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PUBLIC SAFETY & SURVEILLANCE

PUBLIC SAFETY

- Watchlists of Suspects
- People Tracking
- Weapons Detection
- Vehicle Tracking
  - License Plate Recognition

PHYSICAL SECURITY

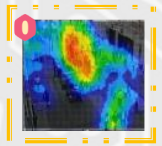
- Surveillance
  - Access Control
  - Intrusion Detection
  - Time & Attendance
- Customized Behaviors
  - Cough Detection
  - Temperature Monitoring

CROWD MANAGEMENT

- Crowd Risk Detection
  - Automated Emergency Response triggers
  - Time & Movements Log
  - Behavior Detection
- People Counting
  - Large Scale Heatmaps
- Bottlenecks and blockades
  - Real-time circulation maps
- Queue Management
  - Queue waiting times

Insight-AI Features

Object Detection

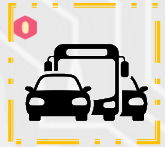


Heatmaps and Waypoints

People Re-Identification

Face Recognition

License Plate Recognition



Vehicle Re-Identification

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RETAIL FOR ENTERPRISE AND SMBs

(as a Service)

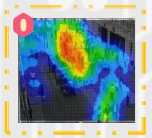
CONSUMER'S DEMOGRAPHICS

- Gender & Age
- Ethnic Group

CONSUMER'S BEHAVIOR

- Purchases Detection
- Product Interaction
  - *Time & Movements Log*
  - *Behavior Detection*
- Attention
- Visits and Traffic
  - *Real-time circulation maps*
  - *Small Scale Heatmaps*
- Customer Experience
  - *Emotion & Reaction*

Pose Detection



Heatmaps and Waypoints

Gender & Age Estimation

Emotion Detection

Object Detection

Face Detection

Insight-AI Features

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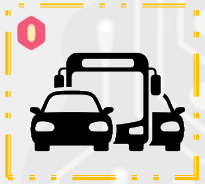
MOBILITY

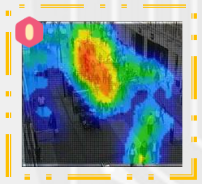
(for Airport Facilities)

Insight-AI Features

Automatic Accident Detection



Vehicle Re-Identification



Heatmaps and Waypoints

License Plate Recognition

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TRAFFIC ANALYSIS

Real-time Accidents Detection

Automated Emergency Response triggers

Violation Detection

Parking Violations

Overspeed Detection

Circulation Analytics

Large Scale Heatmaps

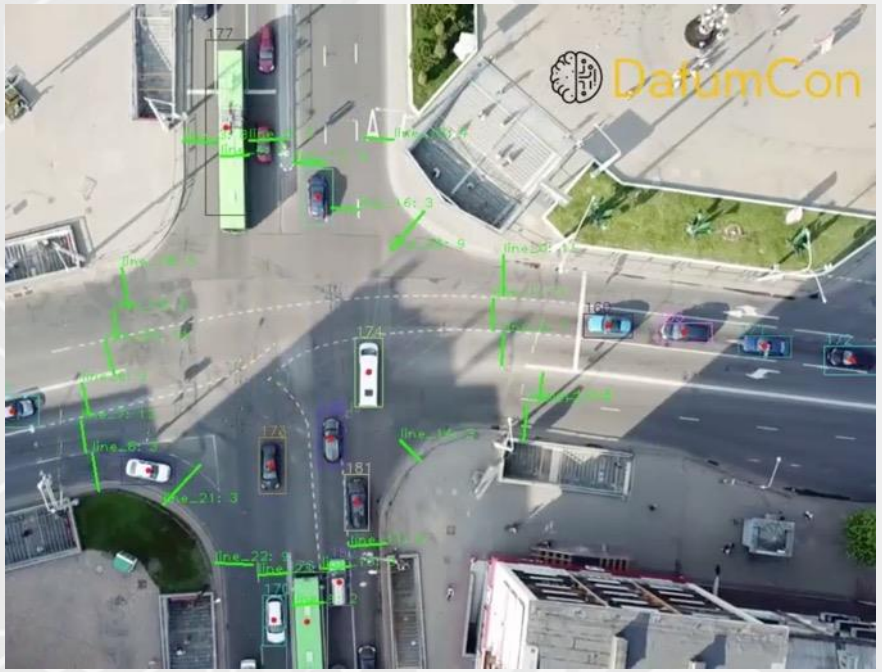
Real-time traffic maps & forecasts

City Scan & Road Inventory

Bottlenecks & blockades

Queue waiting times

Obstacles



Applied Example

CUSTOMIZED SCENARIO:

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CHALLENGE

How computer vision can boost operational challenges by creating data insights.

- **Improve** the services provided to travelers at Riyadh international passport control counters through the use of AI powered Computer Vision**.**
- **Monitor** passport control front desk officers to ensure best possible service to travelers**.**

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SOLUTION

Provide timely alerts and notifications based on passport control officers' behavior and current queue status.

- Detect **target behaviors** from officers (i.e. texting or speaking by phone).
- Understand booth status (available/unavailable).
- Measure and control queue (waiting times and people counting).
- Track officer's **performance** and detect possible **bottlenecks.**

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TARGET BEHAVIORS

Detected in real-time.

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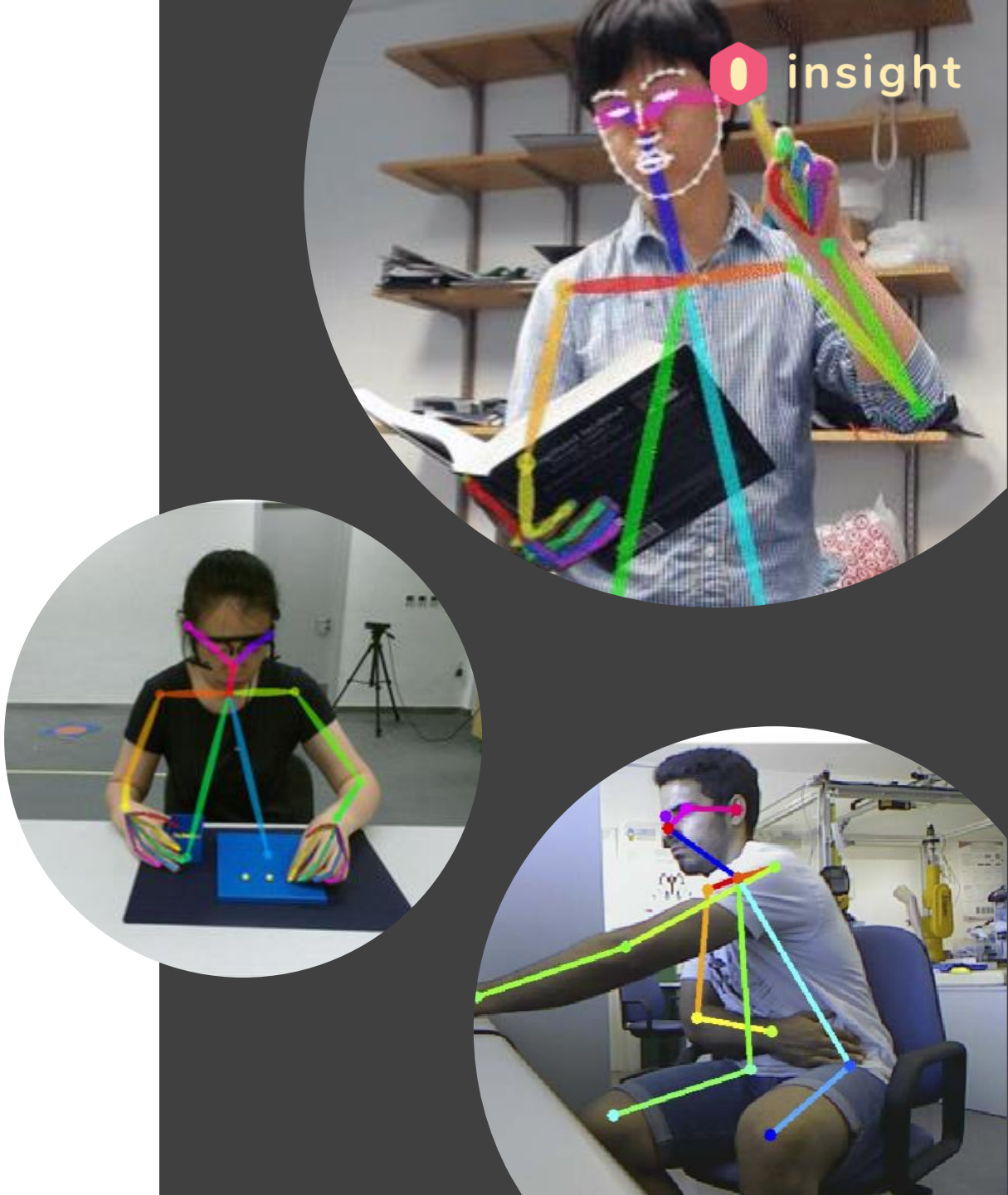
POSE AND ATTENTION

Detection in real-time

- All results are processed and shown in real-time.
- Sensitivity of alerts can be configured by the supervisor at any time.
- Statistical data of agent behavior can be filtered and grouped in any way needed.



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