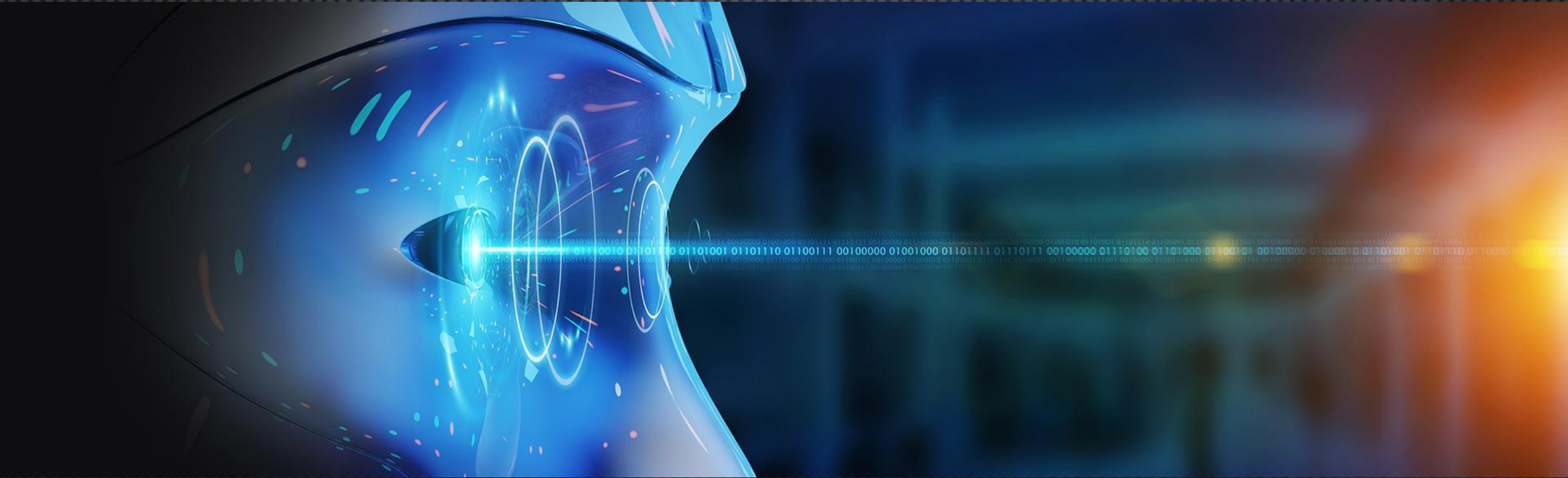


GRAYMATICS



COGNITIVE MEDIA PROCESSING

*deep sensing at cloud scale*

# Plethora of CCTV's Installed & Being Deployed in Cities, Retail, Buildings, Enterprise ... value to be fully unlocked



> 700M  
CCTV's  
projected to be  
shipped in 2019

Major growth of  
IOT/Surveillance  
products leading to a  
need for transforming  
unused data to  
Actionable Data

# GRAYMATICS G3C.AI PLATFORM – MASSIVE BREADTH OF CCTV ANALYTICS

## ENABLING HIGH VALUE FROM THE INSTALLED CCTV DEPLOYMENTS

### Vehicle Analytics

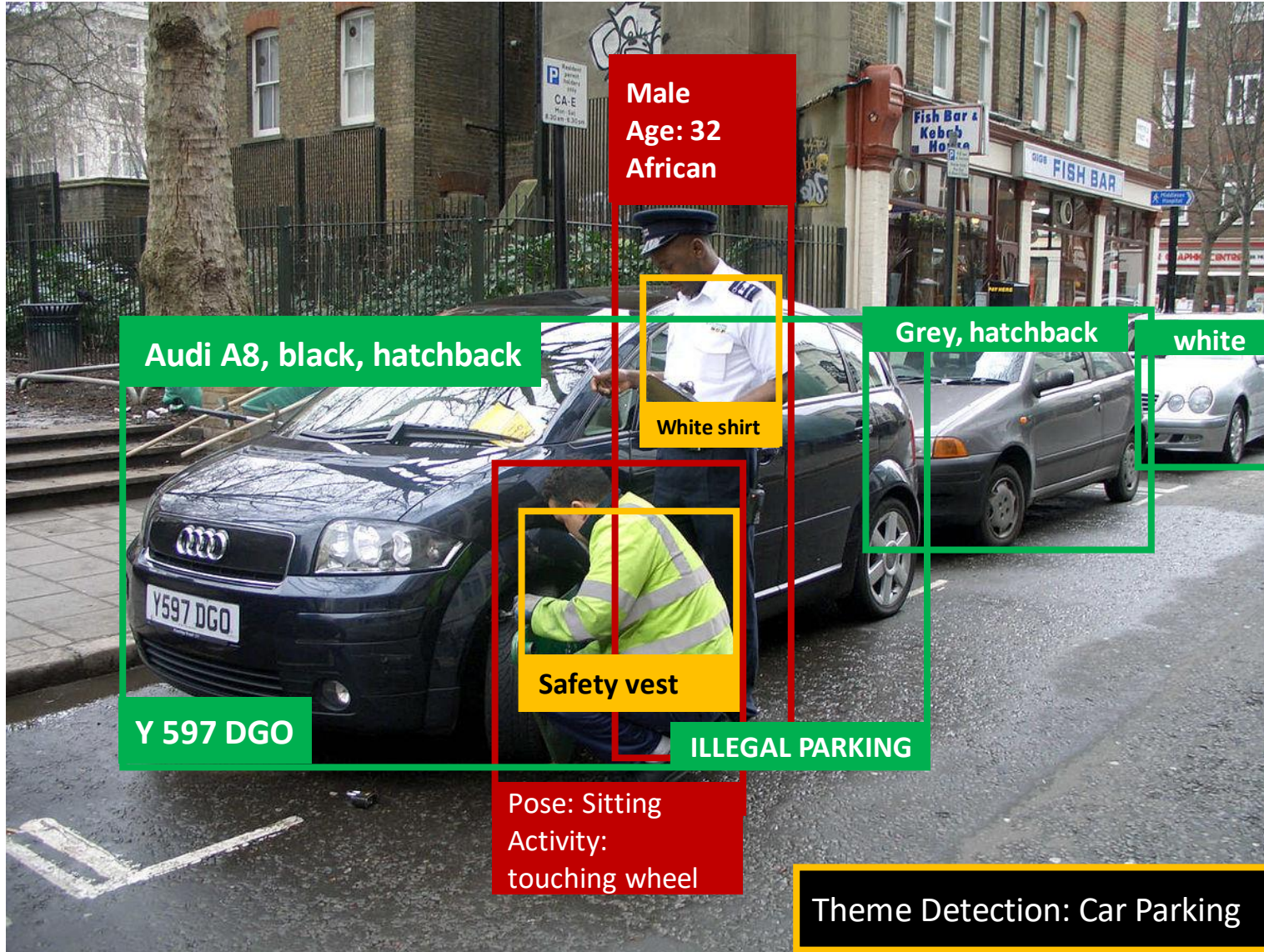
Detect  
Car's  
Color

Make & model  
Number plate

Violation  
Detection

### Activity detection

Applauding waving  
Fighting  
Walking  
& many more..



### People Analytics

Person  
Recognition &  
Tracking

Age  
Gender  
Ethnicity  
Emotion  
Detection

### Clothing Analytics

Dress  
Color  
Pattern  
Sleeve style  
Neck line

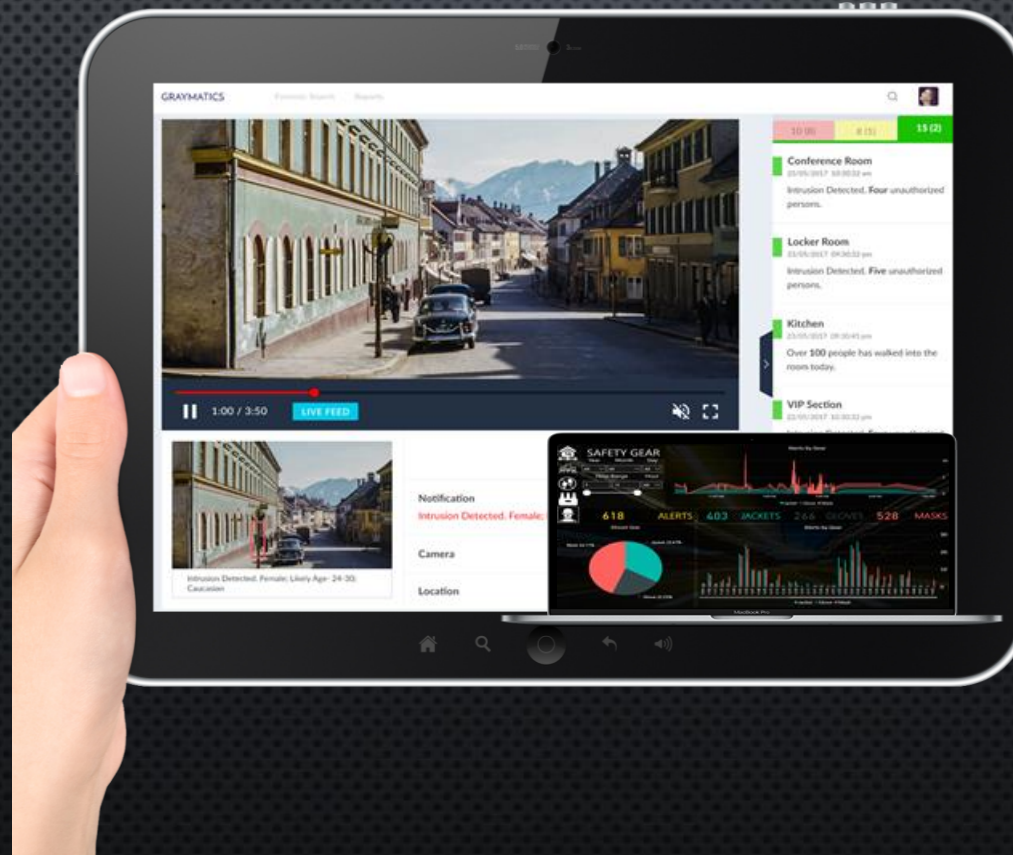
# G3C.AI

## RICHLY FEATURED TOOLS FOR FULL & COMPELLING SOLUTIONS

Full-Featured Notification Panel

... with Insightful Dashboards

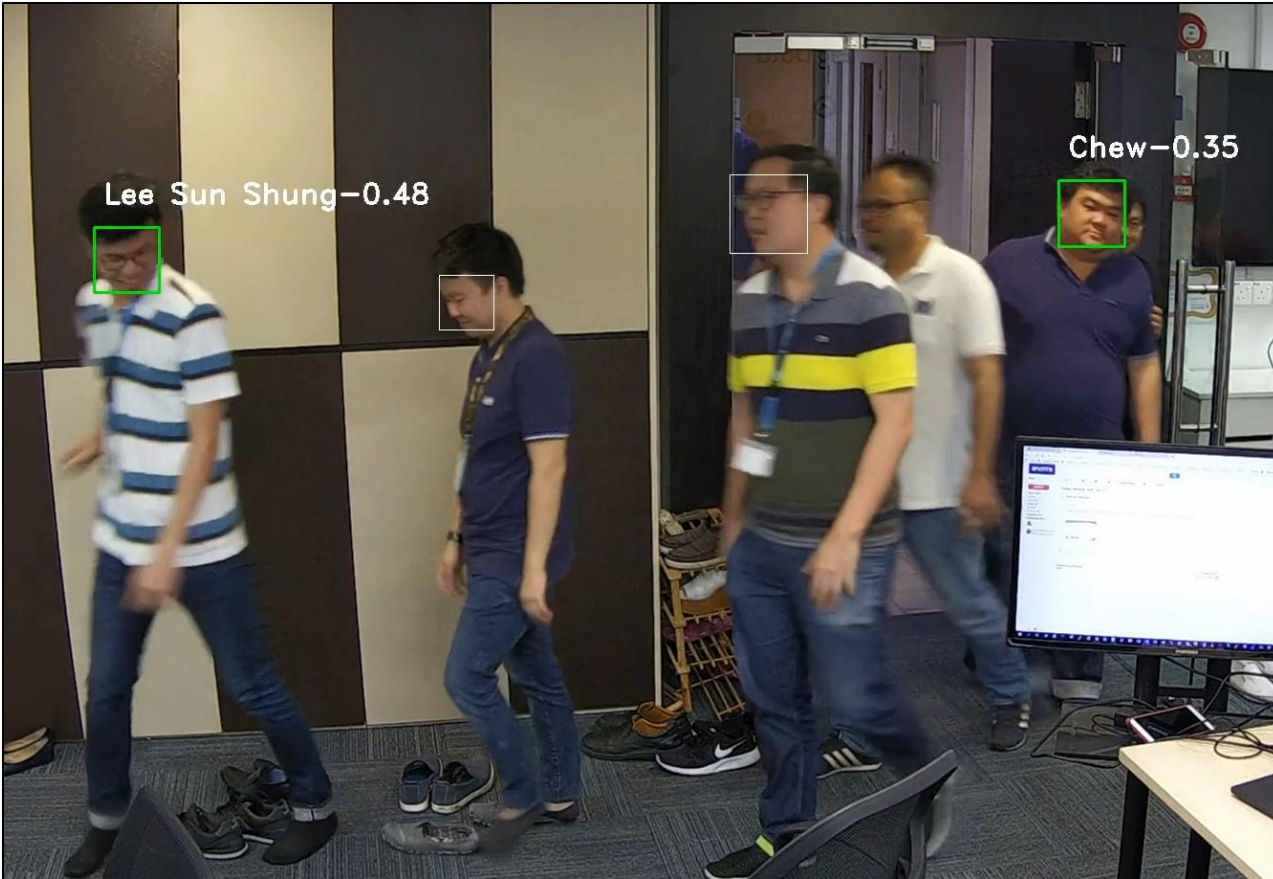
... on Mobile Apps



## ACCESS CONTROL

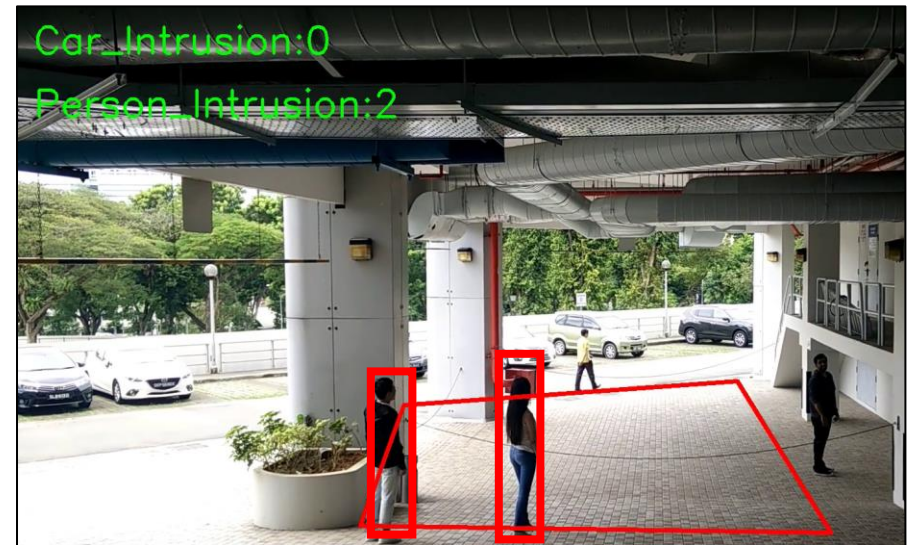
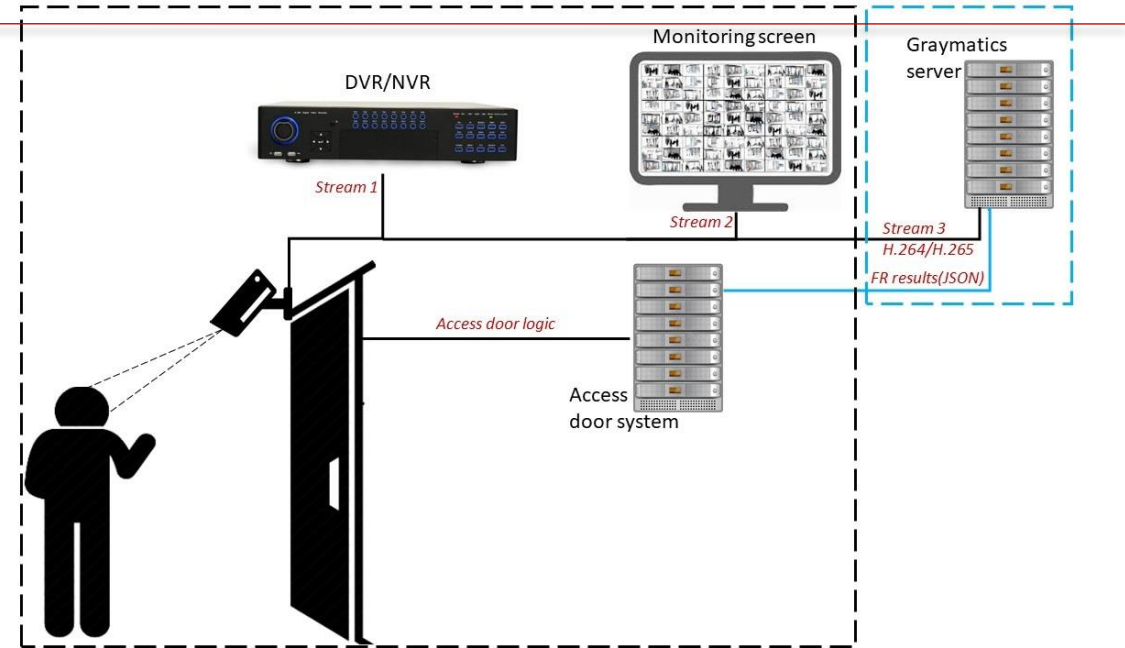
## LOITERING DETECTION

## INTRUSION DETECTION



Automatically unlock door based on facial recognition

Create lists of people to allow/restrict entry into the building



## PROTECT THE PREMISE FROM UNKNOWN PEOPLE USING FACE RECOGNITION



Person Detected: Sandra Millers

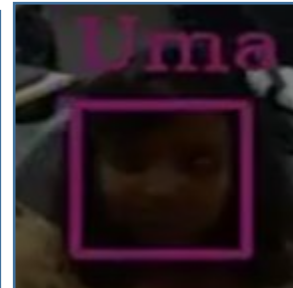
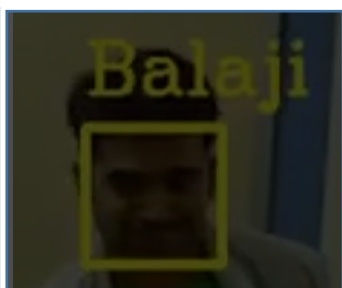
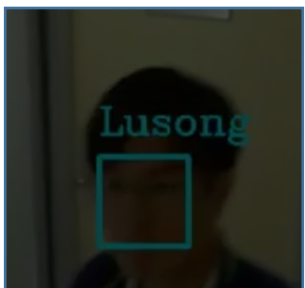
object : jacket  
color : dark gray  
sleeve-style : fullsleeve

object : jean  
color : blue

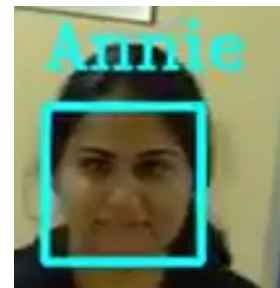
**Automatically unlock door based on facial recognition**

**Create lists of people to allow/restrict entry into the house.**

Black List

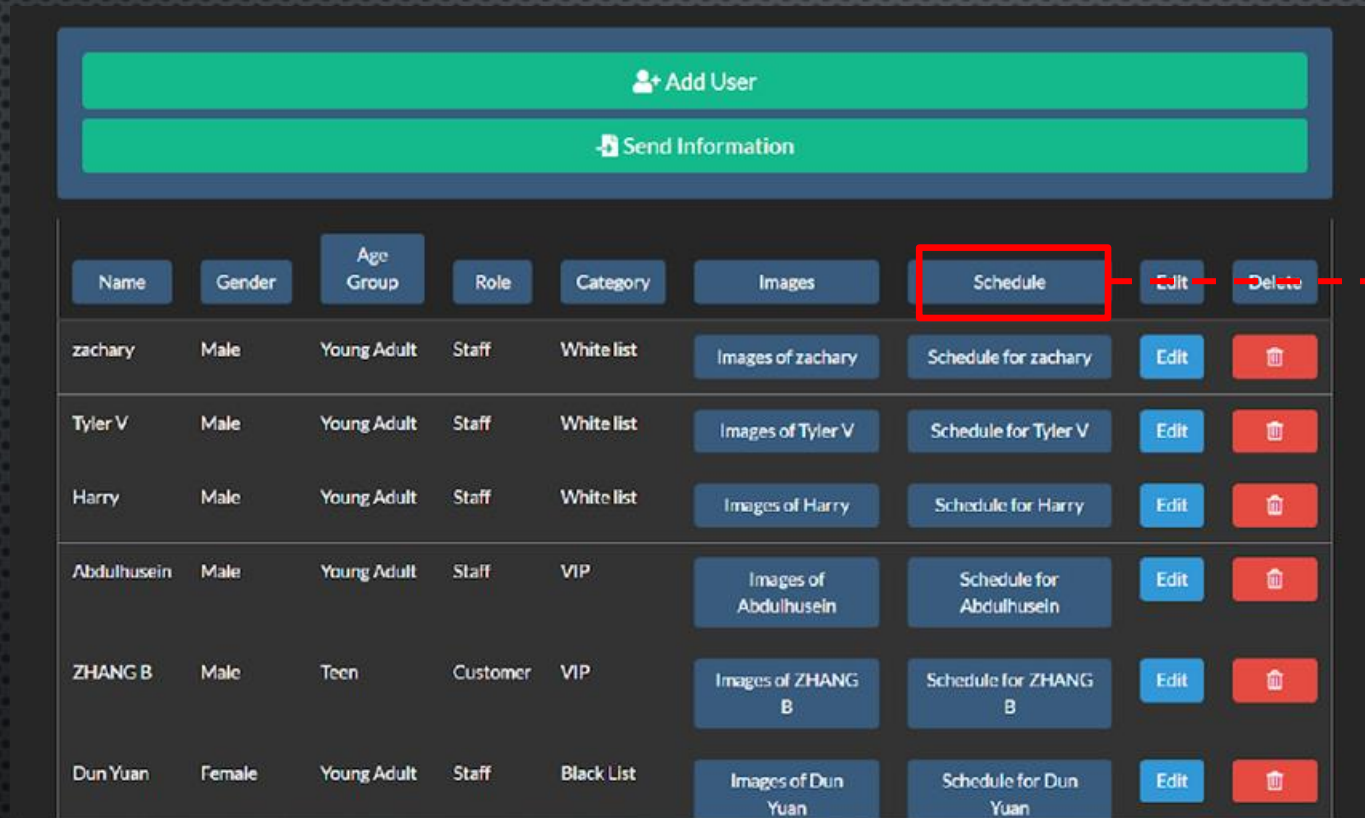


White List



# ATTENDANCE MANAGEMENT SYSTEM

Powered by G3C.AI's Facial Recognition



The screenshot shows a web interface for an attendance management system. At the top, there are two green buttons: 'Add User' and 'Send Information'. Below these is a table with columns: Name, Gender, Age Group, Role, Category, Images, Schedule, Edit, and Delete. The 'Schedule' column for the first row (Zachary) is highlighted with a red box. A red dashed arrow points from this box to a yellow-bordered box on the right containing the word 'Schedule'. Below this yellow box is the text 'Edit employee shifts'.

Name	Gender	Age Group	Role	Category	Images	Schedule	Edit	Delete
zachary	Male	Young Adult	Staff	White list	Images of zachary	Schedule for zachary	Edit	Delete
Tyler V	Male	Young Adult	Staff	White list	Images of Tyler V	Schedule for Tyler V	Edit	Delete
Harry	Male	Young Adult	Staff	White list	Images of Harry	Schedule for Harry	Edit	Delete
Abdulhusein	Male	Young Adult	Staff	VIP	Images of Abdulhusein	Schedule for Abdulhusein	Edit	Delete
ZHANG B	Male	Teen	Customer	VIP	Images of ZHANG B	Schedule for ZHANG B	Edit	Delete
DunYuan	Female	Young Adult	Staff	Black List	Images of Dun Yuan	Schedule for Dun Yuan	Edit	Delete

Edit employee shifts

Edit employee shift times and manage team to get insights on staff performance and attendance, such as lateness, on a real time basis, complete with daily reports.

# SPECIAL USE CASES: DETECT UNATTENDED OBJECTS

✈ Detect Unattended handbags, Baggage in crowded and/ or sensitive locations



- Detect baggage unattended for a predetermined period of time
- Real time instant alerts
- Secure premises from suspicious activities

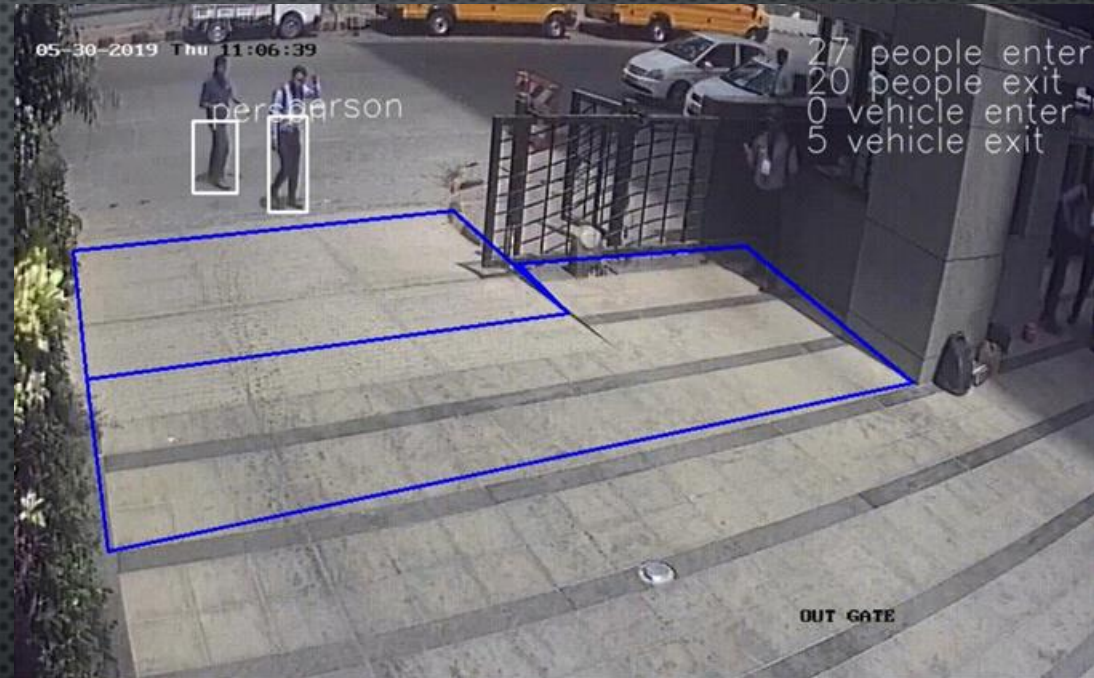


# Use Cases



## Abandoned Object Detection

Send alerts when  
an abandoned  
object is spotted



## People + Car Entry/Exit Count

Count People and  
Car traffic in/out of  
buildings

# USE CASES



Falling Person Detection

Detect a collapsed/fallen person and send alert



Violence Detection

Detect and alert for violence or fighting

# COVIDEO.AI COVID-19 Analytics Solution



- Human Detection and Facial Recognition
- AI Based Human Body Temperature Detection
- Face Mask Detection
- Social Distance Monitoring
- Thermal Scanning and Monitoring Terminal
- Contact Detection
- AI powered Dash Board



## Face Mask

Face Mask Detection uses visible stream from the camera combined with AI techniques to detect and generate an alert for people not wearing face masks. A user-friendly interface allows to monitor and review alerts generated by system.



## Social Distancing

In the fight against the coronavirus, social distancing has proven to be a very effective measure to slow down the spread of the disease. This feature can help raise flag for people not following minimum acceptable social distancing guidelines. Also, an alert will be generated of such violations for administrative authorities to take appropriate action.

latency : 49.1 ms  
times : 36.5 ms





# MANAGING PARKING SPACE | BOOM BARRIER ACCESS THROUGH ANPR



Check available parking spots in  
**REAL TIME**



Automatic boom barrier access through  
**AUTOMATIC NUMBER PLATE RECOGNITION**



available parking spot: F23

## PROBLEM

Number of cameras

1 camera for 5 slots

1000 slots mean 200 cameras

Increased cabling and management cost

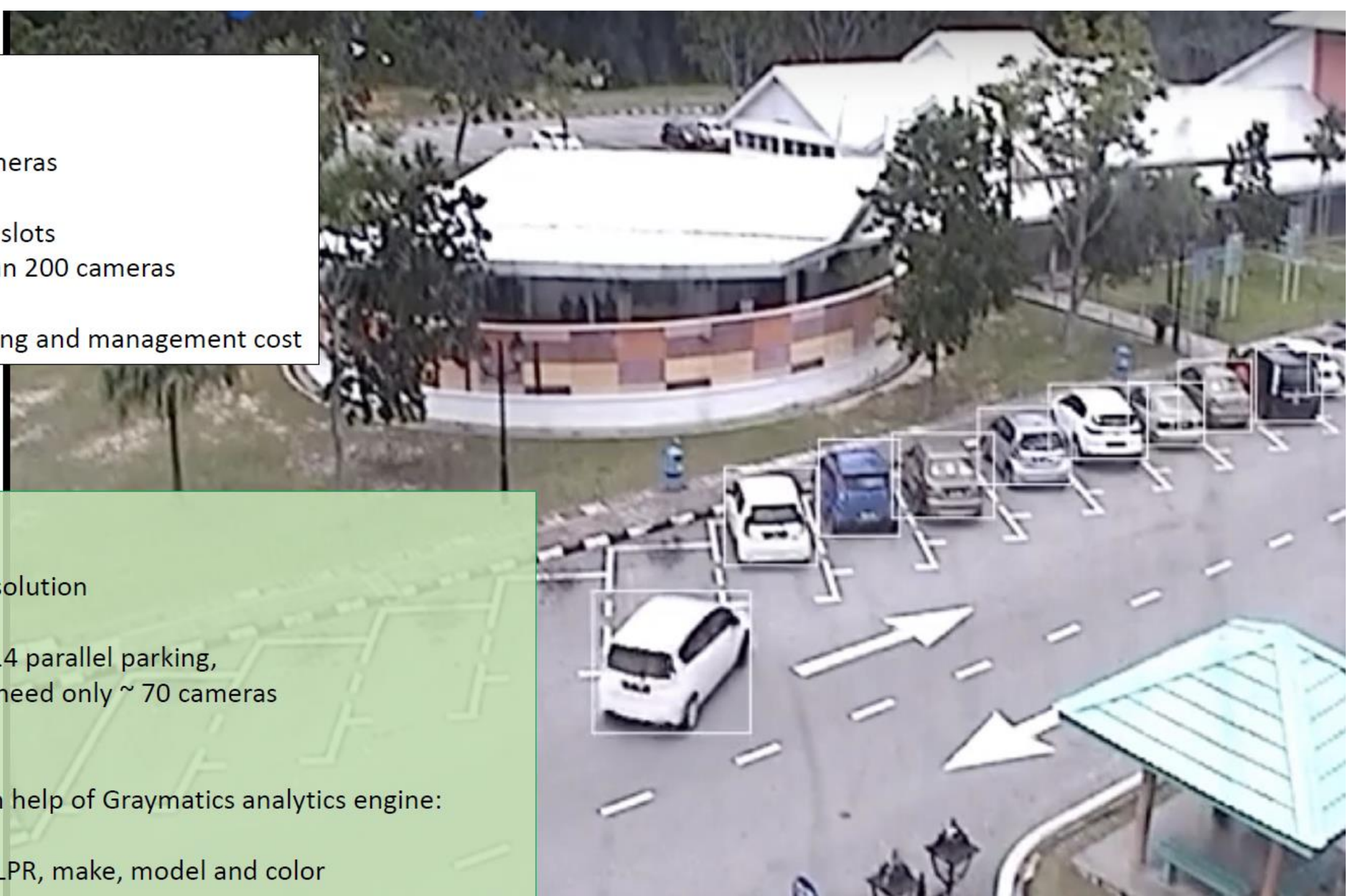
## SOLUTION

NEW Graymatics solution

1 camera for 12- 14 parallel parking,  
1000 slots would need only ~ 70 cameras

Only possible with help of Graymatics analytics engine:

**Tracking:** Vehicle LPR, make, model and color





# MONITOR WAREHOUSE ENTRY/EXIT AND PARKING WITH ZERO MANPOWER



Track vehicles in parking

Detect vehicle  
Make  
Model  
Color  
Number Plate  
to track movement of  
vehicles across the  
premise

# DIFFERENTIATE EMPLOYEES USING CLOTHING ATTRIBUTES



**Uniform code:** brown blazer  
**Person identification:**  
Guest/unknown

**Uniform code:** white shirt  
**Person identification:**  
Employee Class 1

**Uniform code:** Blue shirt  
**Person identification:**  
Employee Class 2

**Uniform code:** Blue shirt  
**Person identification:**  
Employee Class 2

**Uniform code:** white shirt  
**Person identification:**  
Employee Class 1

Identify uniform code for specific days and specific class of employees

Trigger alarm for intruders and defaulters.

# Graymatics' solution for Retail Stores

GOING **BEYOND SECURITY SURVEILLANCE**  
TO CAPITALIZE STORE CAMERAS FOR  
**RICH CONSUMER INSIGHTS**



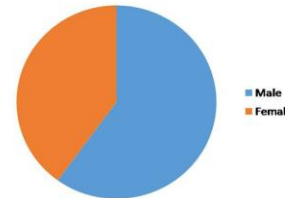
**INTRODUCING**

The  
'Google Analytics'  
for Retail Stores

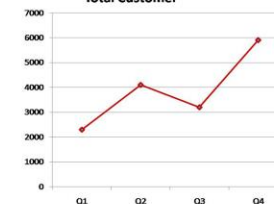
**Total Customers**  
00135

<b>Staff</b> 002	<b>Customers</b> 005
---------------------	-------------------------

**Customer's  
Gender Ratio**



**Total Customer**



Gender : male  
Age: 25 - 30 years  
Ethnicity: caucasian  
Emotion: serious  
Color: gray  
Pattern: plain  
Neckline: shirtie  
Sleeve-style: Longsleeve

# KNOWING YOUR TARGET AUDIENCE IS CRITICAL FOR SUCCESS

## Who are they?

**Gender:** Female  
**Ethnicity:** Asian  
**Age Group:** 30-35

**Returning Customer:**  
Yes [ ID: 3221 ]

**Emotion:** confused

**Current action:** product engagement

**Last engaged product(s):**  
Black wrist watch  
round analog

## What is their in-store behavior?



*Eye ball tracking*

## What are there interest areas

**Engagement section:**  
Michael Kors purse  
**Engagement time:** 35m

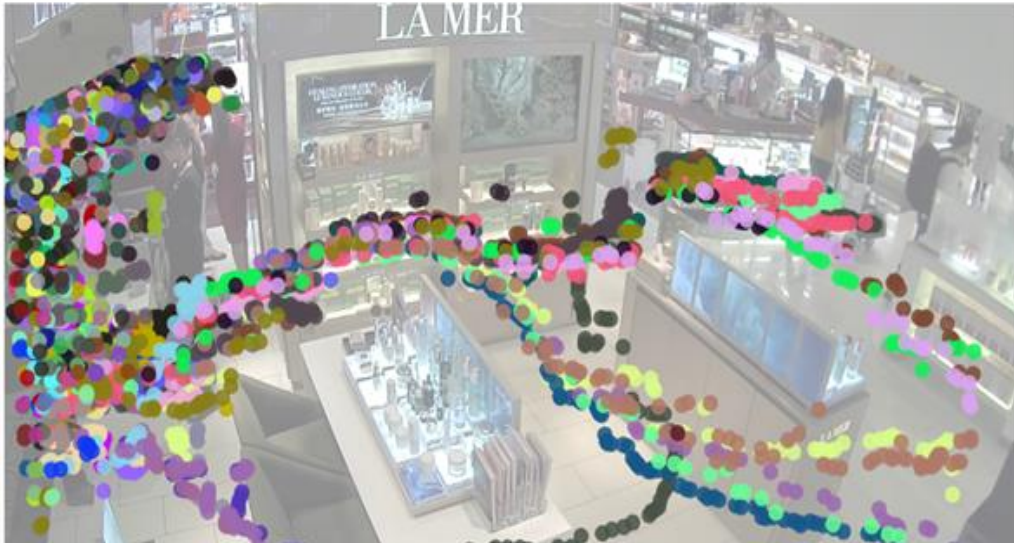
**Section value:** \$9000  
**Monthly engagements in MK section:** 216

## What do they purchase?

**Time of visit:** 10:00  
**Dwell time:** 1 hour  
**Items Purchased:** Hand bag  
**Value:** \$300

# SCREENSHOTS & APPLICATIONS OF DASHBOARDS

People Tracking



Filter by Staff / Customer

- Select All
- Customer

Filter by Hour

- Select All
- 10:00
- 11:00
- 12:00
- 13:00
- 14:00

Filter by Minute

- Select All
- 0
- 15
- 30
- 45

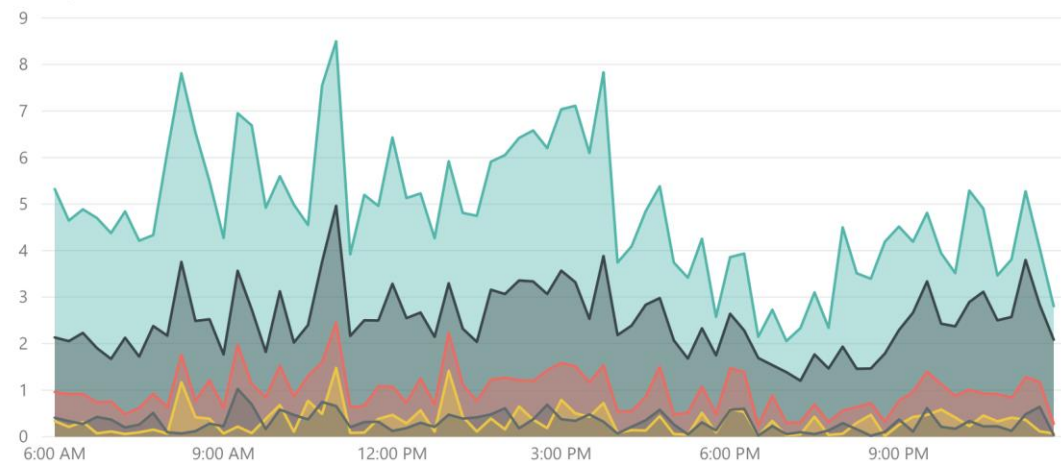
Filter by Customers' Behaviours

- Select All
- Passer-by
- Shopped
- Shopped, Engaged product
- Shopped, Engaged product, Purchased
- Shopped, Purchased

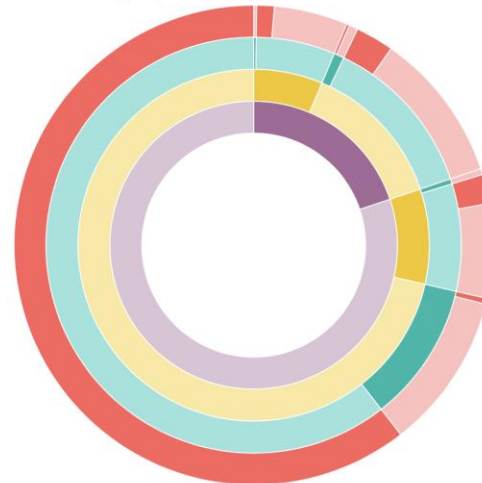
Heat maps



People Count



Product Engagement



Average Product Engagement and Average Purchasing Time and Average Revenue Generated



## POTENTIAL BUSINESS IMPACT AND APPLICATION

### ANALYSIS TYPE

### BUSINESS APPLICATION

OVERALL RATIO OF AVERAGE TIME  
IN QUEUE VS USING ATM

MONITORING OVERALL MACHINE ADEQUACY  
AND OPERATIONAL PLANNING

INDIVIDUAL RATIO OF AVERAGE  
TIME IN QUEUE VS USING ATM

ANALYZING USER DROP-OUT RATE, MACHINE  
FAULTS AND ANOMALOUS BEHAVIOR

USAGE TIME DISTRIBUTION  
ACROSS ATMS

MONITORING MACHINE FAULTS AND  
ANALYZING CUSTOMER BEHAVIOR

USAGE OF COMMUNITY SPACES  
AND FEATURES

OPERATIONAL PLANNING FOR ENGAGEMENT  
FACILITIES AND MATERIALS

CUSTOMER PROFILING

MEASURING MILLENNIAL ENGAGEMENT

SENTIMENT ANALYSIS

MONITORING SENTIMENTS AS A PROXY TO CS

# GETTING READY FOR GRAYMATICS SOLUTION FOR IOT



## Camera agnostic

*(Digital or Analog)*

Leverage existing cctv cameras for enhancing security & adding business insights

## Multiple Hosting options

### 1. Host on cloud

Solution is ready to be hosted with leading cloud service providers like Amazon & Microsoft Azure.

### 2. On-Premise solution

Bandwidth constraints?

Host the solution on premise and leverage power of high speed computing onsite.

### 3. Private Cloud:

Have your own data centre? Move the streams to your datacentre for centralized VA solution.

### 4. Move to the EDGE:

Looking for analytics closest to the camera?  
Graymatics has solution on the edge as well

## Output that matters

### 1. Link directly to CCTV or VMS

Integrate to existing CCTV or VMS solution. Can't get easier than that.

### 2. Direct Notification/Alerts

By-pass non-existent or stone age monitoring system to directly send notification through sms/email.

### 3. Dashboards

Graymatics provide powerful BI dashboards to track activities and One stop overview of all the incidents within one screen.