Dynamic Video Analytics for

University & Hospital Monitoring Centers

Global Surveillance Challenge

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CCTV Systems Purpose

- Public feel safe
- Assets are protected
- Costs are minimised

Trends in CCTV Systems

- More CCTV Cameras
- More Video Screens
- More Operators

Issues with CCTV Systems

- Identifying incidents in real-time
- Limited real-time assessment
- Post incident analysis labour intensive

Dynamic Video Analytic Solution

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DYNAMIC LIVE MONITORING

- Dynamic Video Analytics enhances existing video surveillance platforms by providing intelligent, dynamic live monitoring capability to assist Operators
- Provides continuous self-learning of connected cameras video scenes and movement
- Dynamic Video Analytics displays only those cameras from which the learnt ‘unusual’ activity is occurring
- Through Dynamic Video Analytics the use of CCTV surveillance to pro-actively address threats and incidents is greatly improved
- Dynamic Video Analytics reduces effort required to find people involved in many video feeds, prior to incident

Events Highlighted

- Public safety issues
- Anti social behaviour - fighting
- Suspicious behaviour - loitering
- Unauthorised access – people, vehicles
- Precursory events - crowd gathering / dispersal
- Irregular movement (people / vehicles)
- Property risk - Theft
- Vandalism - Graffiti
- Camera tampering
- Environmental risk – Fire, Flood

Proven Performance

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As a critical component for live-surveillance monitoring, Dynamic Video Analytics system has been **proven to**:

- Transform live monitoring to be more **manageable & effective**
- Increase operators' **focus and engagement**
- Enable real-time assessment of **security & risk** issues
- Enable operators' to **act proactively** to **minimise / mitigate** risks
- Increase the **situational awareness** across assets
- Increase operator **insights & accountability**

Customer Success

Dynamic Video Analytics customers tend to experience:

- **Identification of critical events that were previously missed:** 10+ reportable incidents per 300 cameras every 24 hours
- **Resource optimisation and efficiencies:** A reduction of up to 10% of the manned guarding budget
- **Increased return on investment:** An investment of approximately 10-15% of the overall video surveillance infrastructure costs, enables a 100% efficiency in the reporting of unusual events early in incident development cycle
- **Significantly improved risk management:** A reallocation of resources to a risk focus, based on information collected and the movement to a true command and control infrastructure

Key Differentiators

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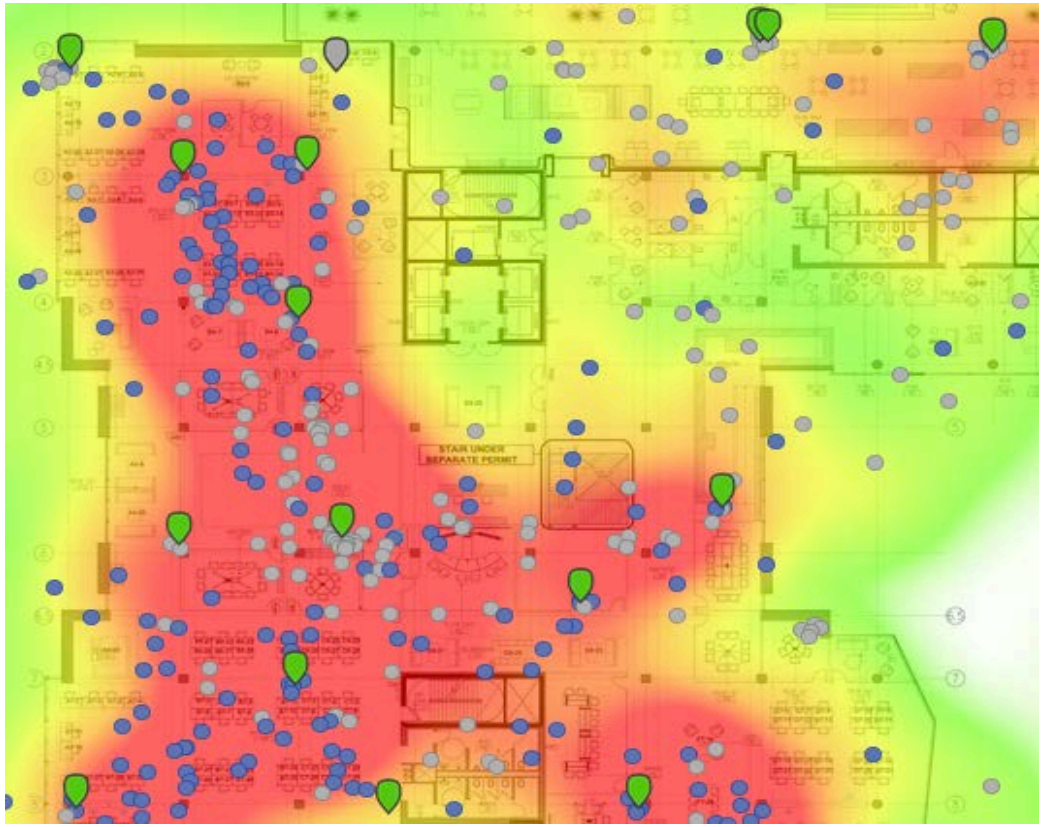
Dynamic Video Analytics	Traditional rule-based Analytics
• Applies automated machine learning to each video feed. Designed for large camera networks (200+ cameras). Hard to predict how people might behave in public settings.	• Applies end-user setup configuration of pre-defined rule sets for each camera. criteria into each camera stream. Typically, applied to specific cameras - sensitive areas, intrusion, people-counting, etc.
• Low burden for setup and on-going maintenance (Lower TCO)	• Labour intensive to install, setup (1+hr / camera) and hard to maintain (Higher TCO)
• Works well monitoring crowded, busy areas for any type of abnormal behaviour (unlimited recognition capability)	• Rule sets breakdown in busy scenes (Deliberate or natural obscuring)
• Less Hardware required 1 server /100 cameras Lower overall cost per channel (Software, Server, Installation, and 1st Year Support)	• 1 server / 12-25 cameras more expensive to scale. Do not effectively process a large number of camera channels especially if these are of busy and complex scenes.

Customer Event Log

- Metrics on CCTV Operator engagement
- Ability to inject events into system and assess performance of CCTV operators
- Identification of incident hotspots

227	29/9/2015	18:25	m1-008	opening exit fire stair 13	a security guard was directed to the site
228	29/9/2015	16:14	m1-030	entering from the stair 6	a security guard was directed to the site
229	30/9/2015	12:08	b2-014	a girl going in the opposite way ot the travalator	a security guard was directed to the site
230	30/9/2015	17-39	b2-014	two girls sitting beside the travaltor	a security guard was directed to the site
231	30/9/2015	23:06	m-e2	troly boy entering the trollyes between the custumers	a security guard was directed to the site
232	30/9/2015	12:35	l1-126	customers playing on the escalator	a security guard was directed to the site
233	30/9/2015	12:44	l1-126	a boy playing on the travelator	a security guard was directed to the site
234	1/10/2015	12:02	l1-036	a girl playing on the escalator near Faces	a security guard was directed to the site
235	1/10/2015	2:06	l1-046	a man is sitting on escalator L2 - L1 Fces side	a security guard was directed to the site
236	1/10/2015	1:10	l2-166	Kone workers fixed escalator L1 - L0 Mark and Spencer	a security guard was directed to the site
237	1/10/2015	17:31	l3-004	Two customers lost in back of the house near prayer elevator	a security guard was directed to the site
238	1/10/2015	12:11	l3-072	A man lost in s10	a security guard was directed to the site
239	2/10/2015	19:40	b3-016	girl was playing near travelator using Scooter	a security guard was directed to the site
240	2/10/2015	17:19	l1-094	group of children playing on the travelator	a security guard was directed to the site
241	2/10/2015	19:01	l2-112	West Elm employees working during the trading hours	a security guard was directed to the site
242	2/10/2015	23:16	l2-112	Child was playing on travelator Carrefour side	a security guard was directed to the site
243	2/10/2015	23:02	L2-072	Escalator L2-L1 Jerry Weber side was out of service	a security guard was directed to the site
244	2/10/2015	22:15	L3-054	Escalator L3 - L2 Vox side was out of service	a security guard was directed to the site
245	2/10/2015	19:05	m1-030	opening s6 fire exit	a security guard was directed to the site
246	3/10/2015	16:02	Cam genarator room 1	evacuation puplic address have been active	a security guard was directed to the site
247	3/10/2015	13:52	l1-046	children playing with the travalator	a security guard was directed to the site
248	3/10/20145	22:43	l3-070	lost kids at s12 fire exit	a security guard was directed to the site
249	3/10/20158	20:29	l3-078	nessma employe eatting in service coredore	a security guard was directed to the site
250	3/10/2015	0:25	l3-100	a group of girls running into the elevator	a security guard was directed to the site
251	3/10/20158	8:50	m1-030	opening s6 fire exit	a security guard was directed to the site
252	3/10/2015	9:06	m1-030	opening s6 fire exit	a security guard was directed to the site
253	4/10/2015	22:18	Cam genarator room 1	evacuation puplic address have been active fuel tank werrning	a security guard was directed to the site
254	4/10/2015	19:29	l1-164	medical treatment of an old women has been fall on escalator	a security guard was directed to the site



PATENTED TECHNOLOGY

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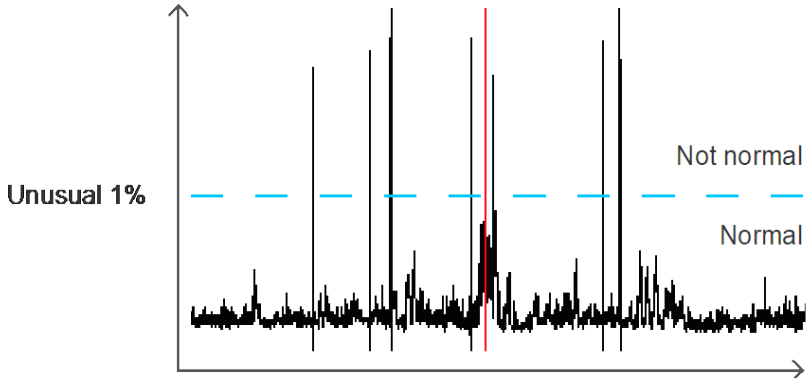

1. Accesses camera stream or stream from the VMS
2. Analyses the optic-flow per frame then applies machine-learning
3. Self-learns “Normal” motion patterns
4. Compares to live view and highlights “Not Normal”

Conclusion

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- As CCTV systems become bigger the opportunity for real time monitoring and intervention in public safety, vandalism, break-ins and other issues become effectively impossible.
- Dynamic Video Analytics is a simple add-on to any existing CCTV system to detect unusual incidents in real time. It is unique in that it requires no set up and is self learning.
- The system is successfully in use in Australia in University campuses and transport facilities, and in the Middle East and the US in shopping centres, public areas and transport environments.
- In the case of education, it will detect incidents of public safety (attacks, bullying), vandalism (graffiti, property damage), premises intrusion (breaking through fences, gates, windows etc.) and unusual events (public urination, posters installation, illegal vehicle parking and movement, unusual crowd activity etc.)
- The key value for any user of Dynamic Video Analytics is the opportunity for real time intervention - stopping or limiting damage, apprehending the wrong doers, changing behaviour when people know they will be caught etc.
- Call 01483 837624 if you would like to discuss further