



AI at Scale

Detect anomalous behavior using security surveillance video streams

The Big Picture

A leading French aerospace and defense company sought to use access control data and surveillance videos to identify abnormal behaviors, while minimizing the rate of false alarms and optimizing true positive detections. This would help support its operator in assessing the origin, root cause, and impact of the alarm. The company also wanted to develop a 'point of view' and recommendations on improving the efficiency and intelligence of infrastructure.

Transformative Solution

The company performed root-cause analysis to understand people flows, which could help it pre-empt anomalies and improve operational efficiencies. Using statistical and machine-learning techniques, it developed a solution framework to analyze employees' behavior and flows at various access points and identify anomalous activities. It also developed an interactive dashboard that enabled tracking of the facility by harmonizing data from various sources. Advanced machine-learning techniques, such as self-organizing maps, were used to analyze employee behavior.

The approach revealed several key insights. Using statistical and machine-learning models to identify anomalies revealed that 90% of anomalies were due to higher usage, invalid cards, and unusual building visits. The approach also derived insights about employee behavior such as duration of stay, buildings accessed, campus entry times, access patterns, and more.

The Change

As a result of the solution, the company gained several benefits. The company's facility analysis dashboard can be used for real-time tracking and reporting of anomalous behavior at any access point. Also, employee analysis can help in understanding patterns in employee behavior at any granularity level—such as overall, department, or individual level—and further compare an individual's behavior to identify anomalies.

The company also gained the ability to harmonize data from various sources like access control data, video files, and external sources like live weather and traffic status. It gained the ability to process streams of video and access data together to create a single view of the employee.