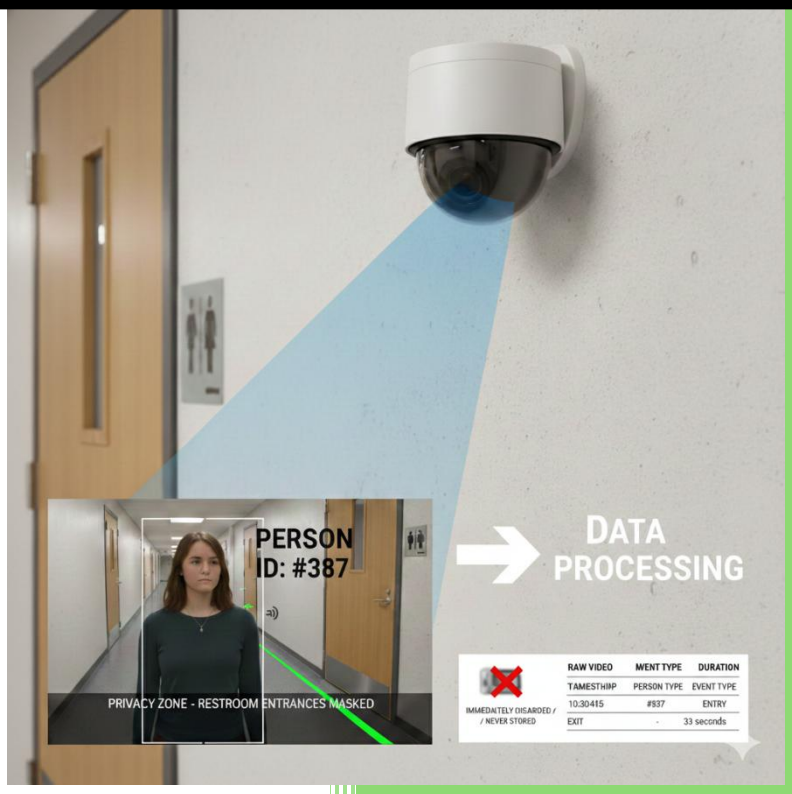
AGen

CCTV Face Recognition



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AGen AI-Powered CCTV Face Recognition & Personnel Movement Analytics Solution

Introduction

Traditional CCTV systems are designed primarily for video recording. While they provide visual evidence of events, they offer limited assistance when organizations need to identify who entered a particular area, how frequently employees visited certain locations, or whether unauthorized personnel accessed sensitive zones.

Reviewing conventional CCTV footage is often labor-intensive, requiring security personnel or management to manually browse hours of video recordings to locate relevant incidents.

Our proposed **AGen AI-Powered CCTV Face Recognition & Personnel Movement Analytics Solution** transforms conventional video surveillance into an intelligent monitoring platform capable of:

- Automatically identifying individuals through facial recognition.
- Converting detected faces into readable employee identities.
- Recording movement events into searchable logs.
- Generating attendance and behavior analytics.
- Detecting unauthorized access to sensitive areas.
- Supporting Human Resource, Security, and Operational Management initiatives.

This solution allows organizations to search for events using employee names rather than manually reviewing recorded video footage.

Current Challenges with Conventional CCTV

Traditional CCTV Limitations

Video-Only Recording

Conventional CCTV systems only capture video footage without identifying individuals.

Time-Consuming Investigations

Security personnel must manually review footage when investigating incidents.

No Identity Tracking

The system cannot automatically determine:

- Who entered an area
- When they entered
- How long they stayed
- Frequency of visits

Limited Data Analytics

Management cannot easily obtain:

- Staff movement trends
- Area visitation frequency
- Restricted area access reports
- Behavioral analytics

Proposed Solution

AI Face Recognition CCTV Platform

The system utilizes AI-powered facial recognition technology to automatically identify employees and visitors in real time.

Whenever a person appears within the camera's field of view:

1. Face is detected.
2. Face is matched against employee database.
3. Identified person name is displayed.
4. Entry event is logged automatically.
5. Timestamp and location are recorded.
6. Reports and analytics are generated.

Automatically Recorded Information

Data Captured	Description
Employee Name	Human-readable identity
Employee ID	HR System Reference
Location	Camera Zone
Date & Time	Event Timestamp
Entry Time	Time entering area
Exit Time	Time leaving area
Duration	Time spent in area
Visit Count	Number of visits

Key Benefits

Search by Person Instead of Video

Instead of reviewing several hours of footage:

Example: Search: **"John Tan"**

Result:

- Entered Server Room: 10:21 AM
- Exited Server Room: 10:28 AM
- Duration: 7 Minutes

The associated video clip can be retrieved instantly.

Automated Personnel Movement Tracking

Management can understand personnel movement patterns across facility zones.

Examples:

- Production Areas
- Warehouse
- Quality Control Rooms
- Office Floors
- Restricted Access Areas

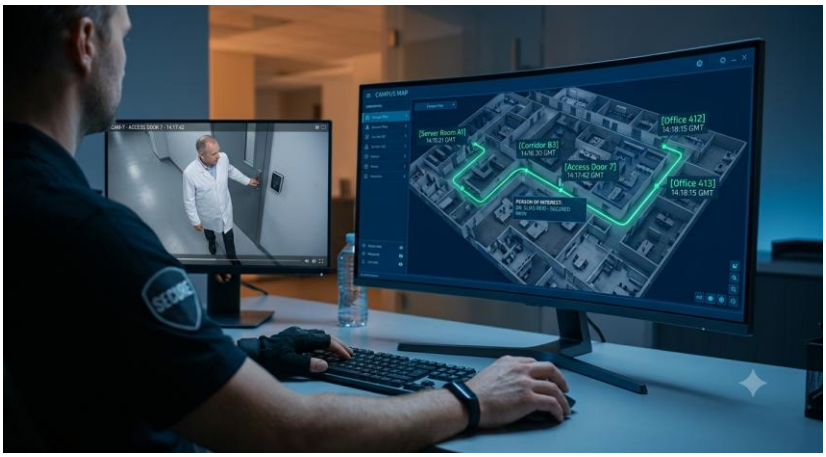
Security Enhancement

Immediate identification of personnel accessing high-security locations.

Examples:

- Server Rooms
- Director Offices
- R&D Laboratories
- Finance Departments
- Control Rooms

Unauthorized access attempts can generate alerts automatically.



Human Resource Analytics Applications

1. Toilet Visit Monitoring

Objective

Understand excessive non-productive movement patterns.

Camera Location

Outside restroom entrances only.

Data Generated

- Number of toilet visits per day
- Duration of each visit
- Average time spent
- Frequency trend analysis

Sample Report

Employee	Visits	Average Duration
Employee A	12	8 min
Employee B	3	4 min

Privacy Protection

No cameras are installed inside toilets.

Monitoring only records entry and exit movement in public corridors.

2. Smoking Area Monitoring

Objective

Track smoking break frequently.

Data Generated

- Number of smoking area visits
- Duration per visit
- Total smoking time per shift
- Repeat visit patterns

Benefits

- Improve productivity analysis
- Ensure compliance with break policies
- Support workplace health initiatives

Security Monitoring Applications

3. Server Room Access Tracking

Objective

Protect critical IT infrastructure.

Detect

- Authorized personnel entry
- Unauthorized personnel entry
- Out-of-hours access

Alerts

Automatic notification when:

- Unauthorized staff detected
- Unknown face detected
- Access outside approved schedule

4. Director Office Monitoring

Objective

Protect executive offices and confidential information.

Features

- Entry/exit tracking
- Visitor identification
- Audit trail generation

Additional Recommended Deployment Areas

5. Production Line Entry Points

Monitor personnel entering production zones.

Benefits:

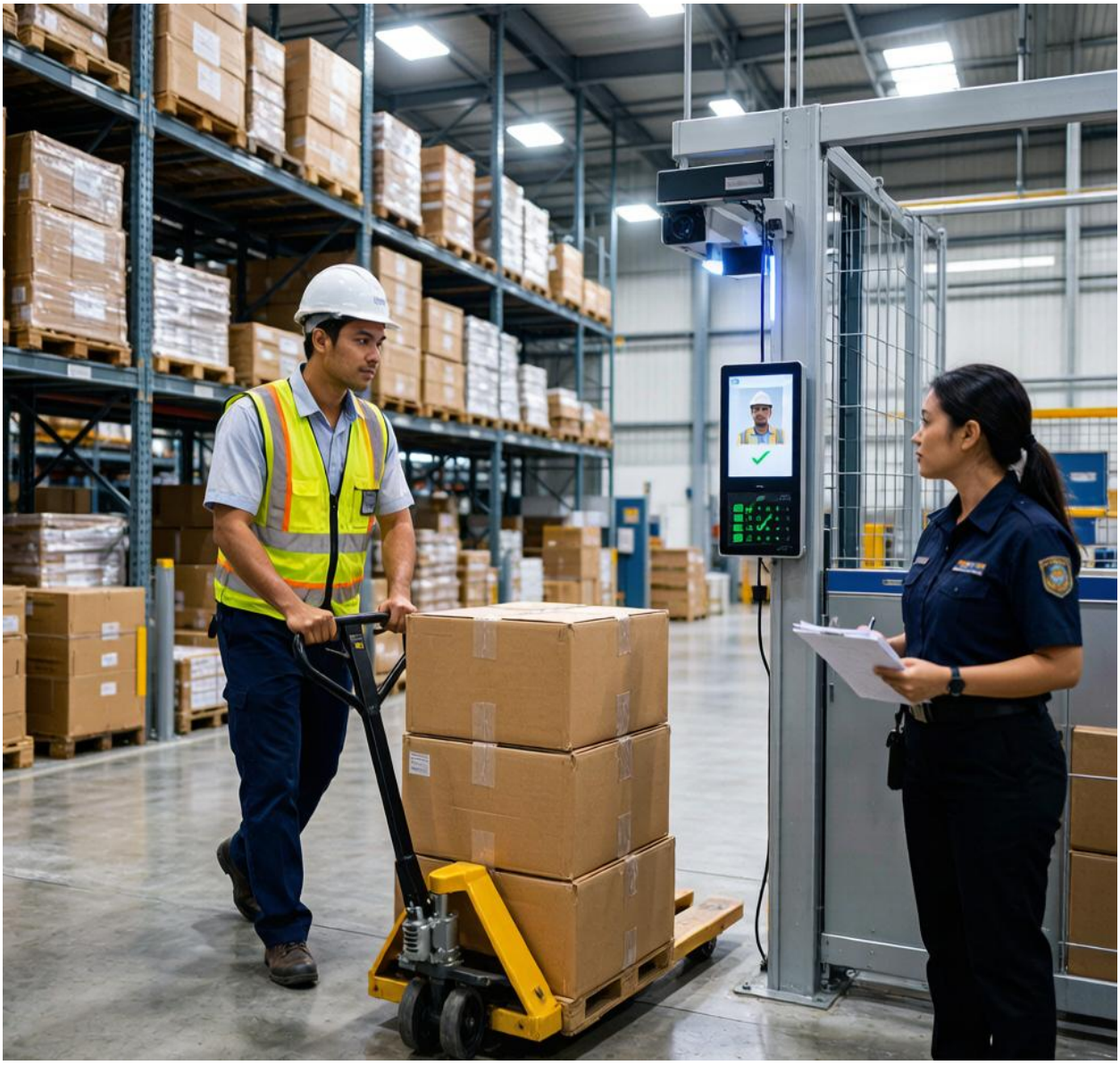
- Shift compliance monitoring
- Headcount validation
- Unauthorized area detection

6. Warehouse Access Points

Track movement of warehouse personnel.

Benefits:

- Inventory security
- Theft prevention
- Personnel accountability



7. Quality Control Laboratory

Monitor access to testing and inspection facilities.

Benefits:

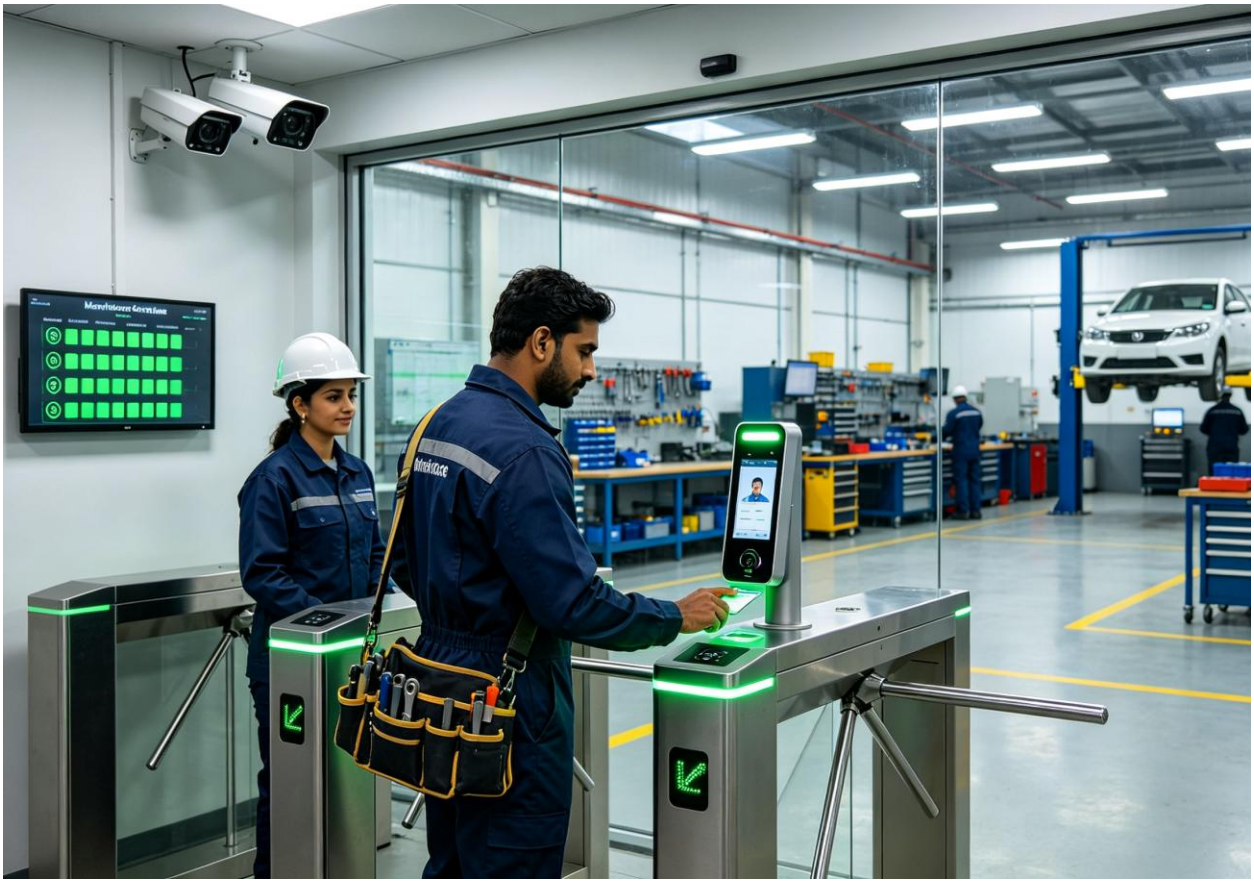
- Restricted entry management
- Audit support
- Compliance reporting

8. Maintenance Workshop

Track technician attendance and deployment.

Benefits:

- Maintenance activity tracking
- Workforce utilization analysis



9. Overtime Work Areas

Monitor personnel presence after normal working hours.

Benefits:

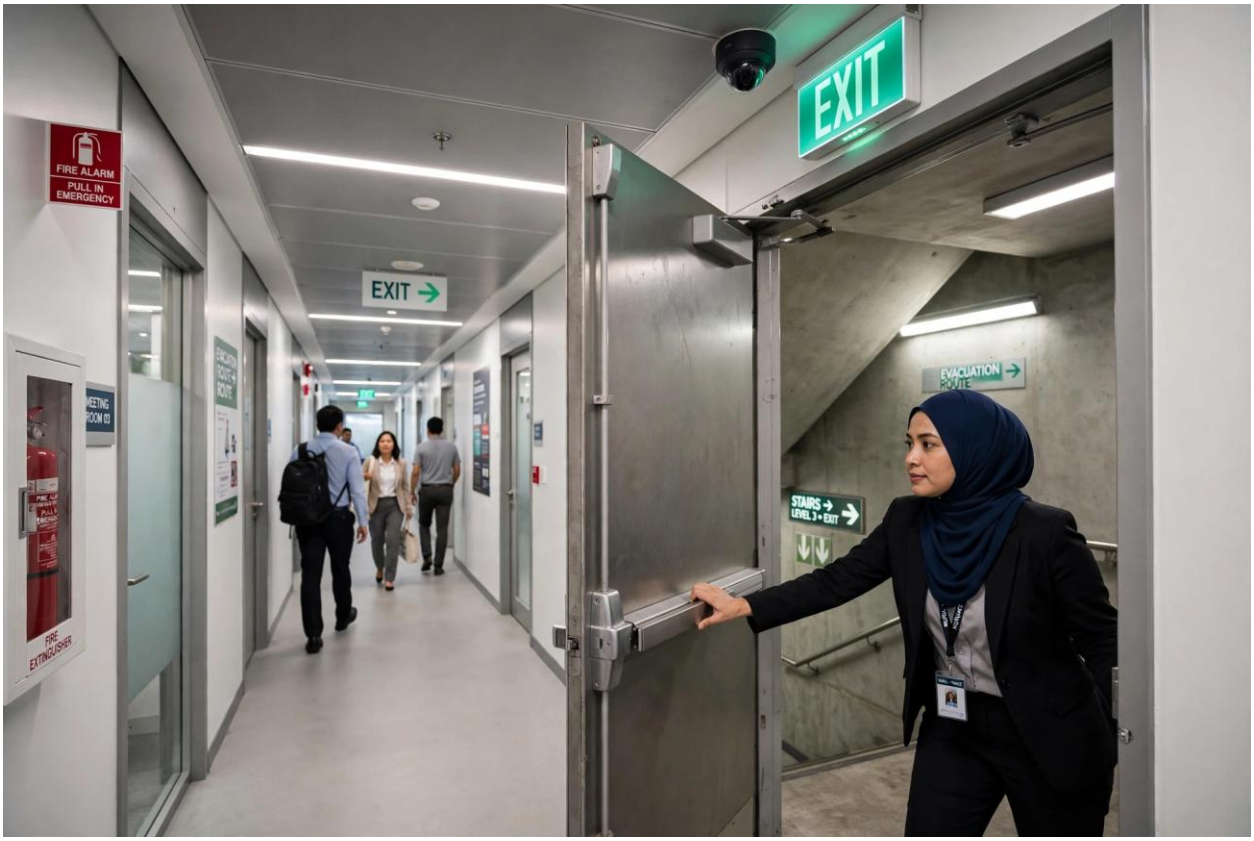
- Overtime verification
- Security enhancement
- Cost control

10. Emergency Exit Routes

Detect misuse of emergency exits.

Benefits:

- Safety compliance
- Unauthorized exit monitoring

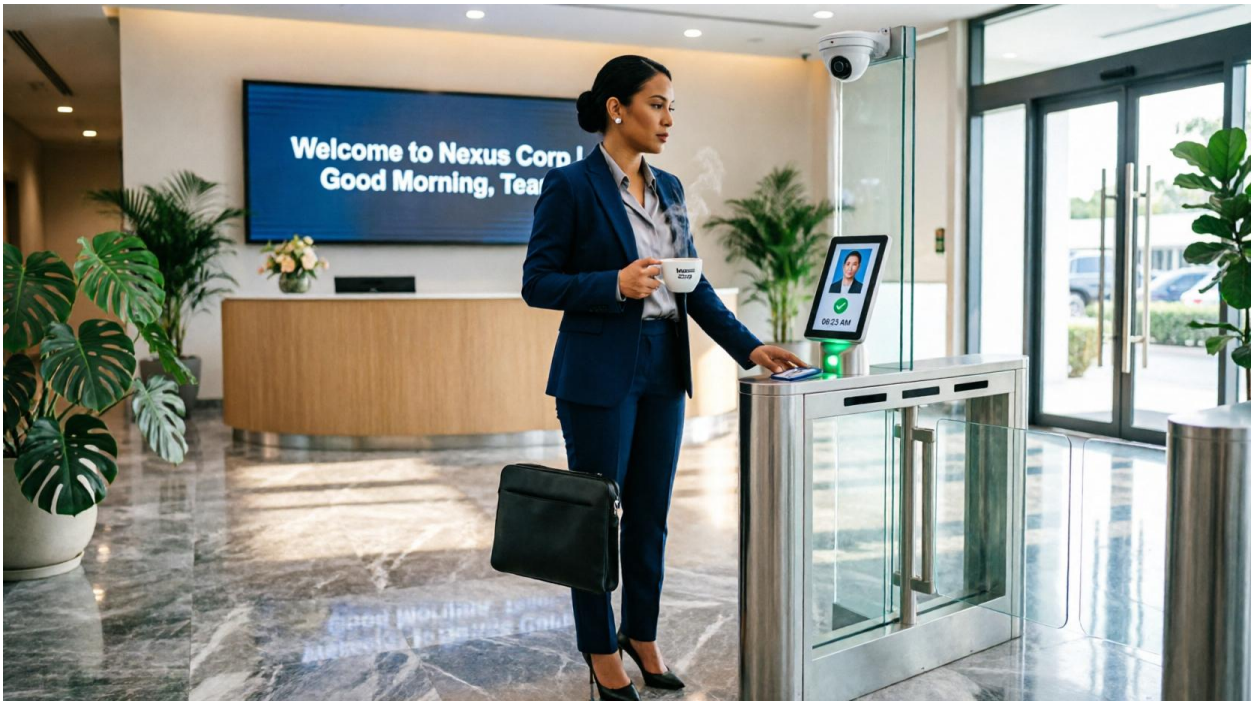


11. Main Entrance & Exit

Track employee arrival and departure.

Benefits:

- Attendance validation
- Visitor tracking
- Security monitoring



12. Loading Bay & Shipping Areas

Monitor personnel accessing goods movement areas.

Benefits:

- Cargo security
- Theft investigation
- Logistics accountability

13. Document Archive Rooms

Track personnel accessing confidential documents.

Benefits:

- Compliance audit support
- Information security

14. High Value Spare Parts Store

Monitor access to critical spare part inventory.

Benefits:

- Inventory protection
- Unauthorized access alerts

Analytics Dashboard

The system can provide management dashboards showing:

Personnel Analytics

- Most visited areas
- Frequent visitors
- Time spent by area
- Movement history

Productivity Analytics

- Smoking break frequency
- Toilet visit frequently
- Time spent outside workstation
- Attendance patterns

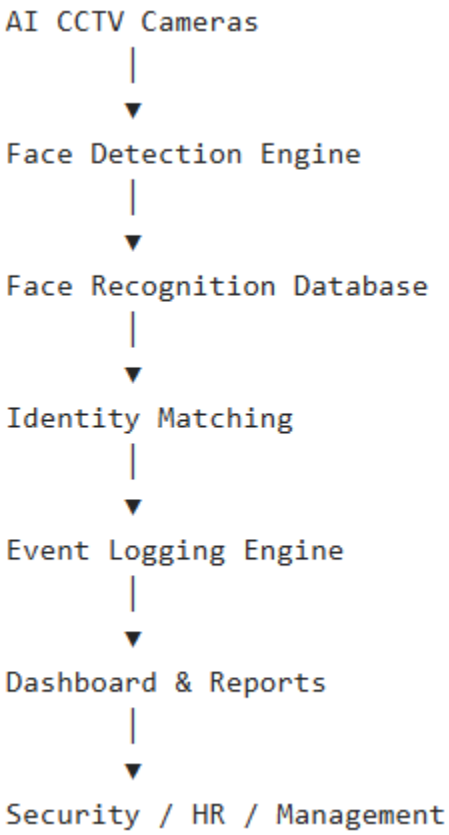
Security Analytics

- Unauthorized access attempts
- Unknown face detection
- After-hours access
- Restricted area violations

Solution Architecture

AGen AI-Powered CCTV Face Recognition & Personnel Analytics Solution transforms conventional CCTV monitoring into an intelligent identity-based monitoring platform. Instead of only recording video footage, the system automatically detects individuals, identifies them through facial recognition, records their activities, and stores all events in a centralized database for security, operational, and HR analysis.

The solution enables management to search and analyze personnel movements using employee names, departments, locations, and timestamps without manually reviewing hours of CCTV footage.



Expected Business Benefits

Reduced Investigation Time

Search by employee name instead of reviewing hours of video.

Improved Security

Immediate visibility of personnel entering restricted areas.

Enhanced Compliance

Maintain auditable access records for sensitive locations.

Increased Operational Visibility

Understand workforce movement across the facility.

Actionable HR Insights

Generate data-driven workforce behavior analytics rather than relying on observation alone.

Conclusion

AGen AI-Powered CCTV Face Recognition & Personnel Movement Analytics Solution transforms conventional CCTV from a passive video recording tool into an intelligent operational and security platform. By automatically identifying individuals, generating searchable movement logs, and providing real-time analytics, organizations can significantly improve security, operational visibility, investigation efficiency, and facility management while reducing the effort required to review CCTV recordings.

Important Note: The solution should be implemented in compliance with local privacy and employment regulations. Personnel should be informed about monitoring practices, and monitoring should focus on legitimate business, security, safety, and compliance objectives rather than intrusive surveillance. This significantly improves employee acceptance and supports regulatory compliance.