SYSTEM DIAGRAM AND UI DESIGN

Final Year Project
Software Requirement Specification
For
AI Smart Behavior Analysis
BSCS
By

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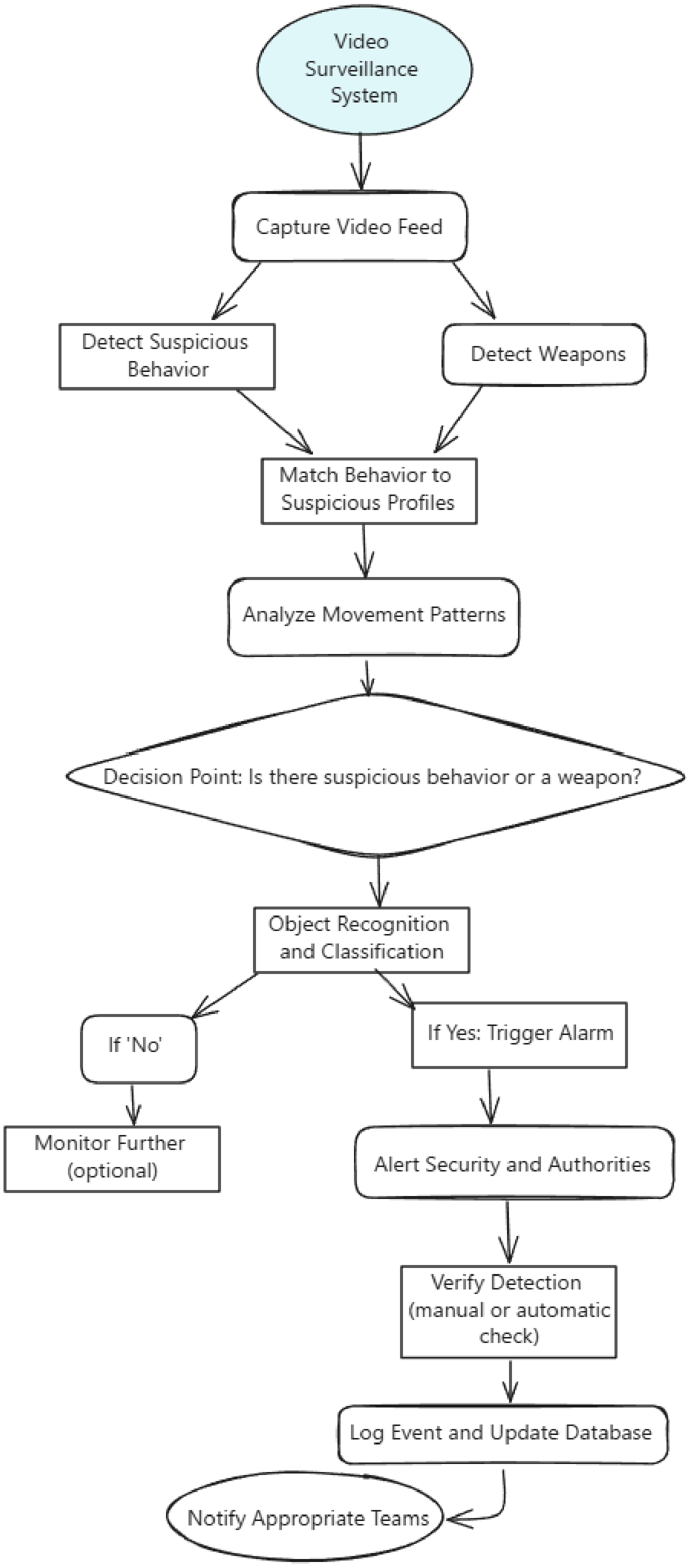
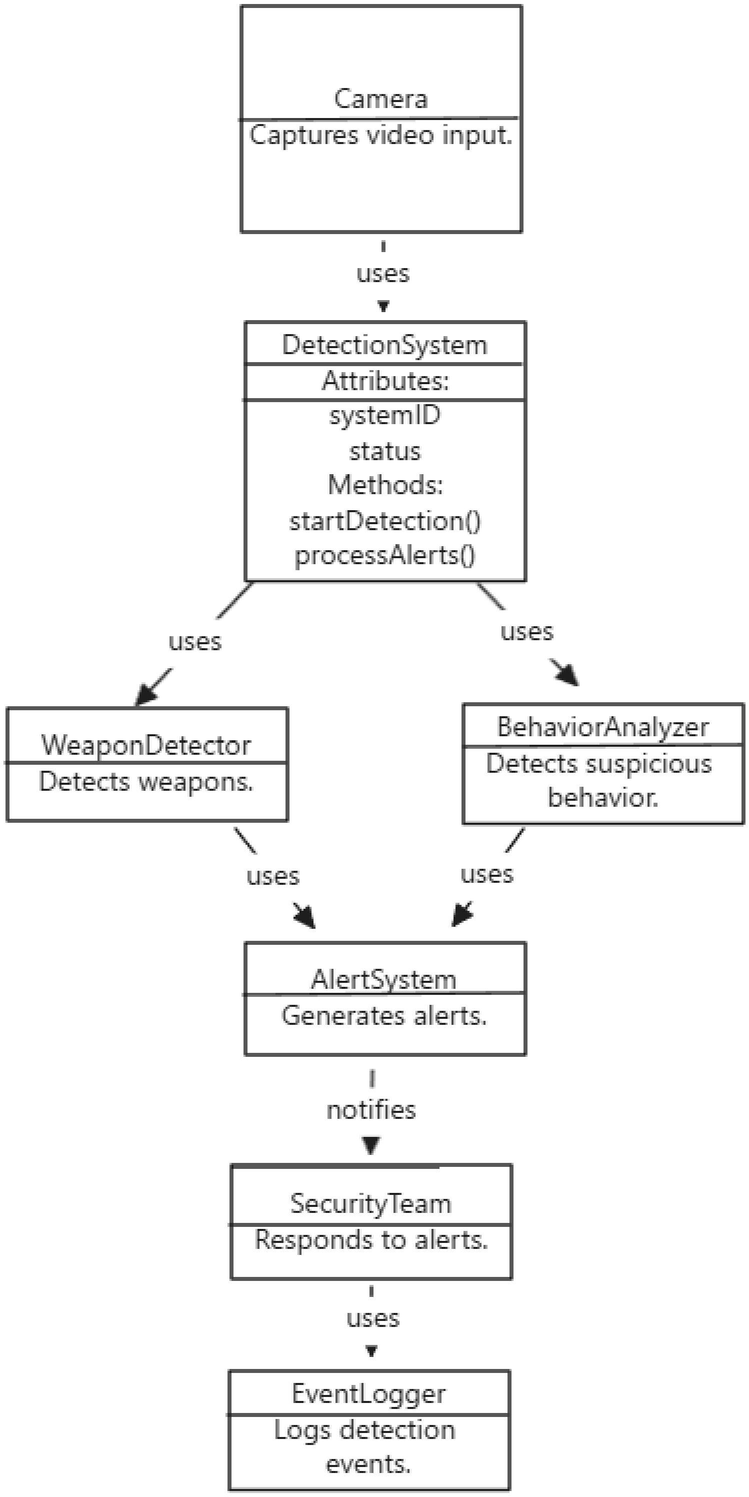
Supervised by:
Ma’am Anila Amjad __________________(Signature)

Department of Computer Science
Lahore Garrison University,
Lahore

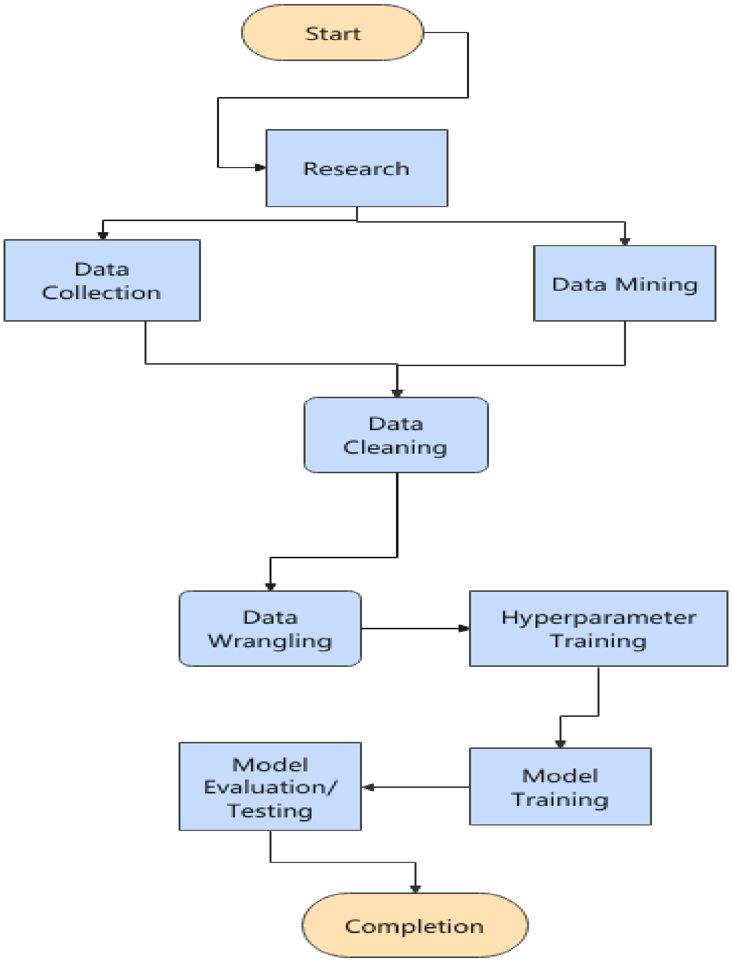
Activity Diagram:


Video Surveillance System
Capture Video Feed
Detect Suspicious Behavior
Detect Weapons
Match Behavior to Suspicious Profiles
Analyze Movement Patterns
Decision Point: Is there suspicious behavior or a weapon?
Object Recognition and Classification
If 'No'
If Yes: Trigger Alarm
Monitor Further (optional)
Alert Security and Authorities
Verify Detection (manual or automatic check)
Log Event and Update Database
Notify Appropriate Teams

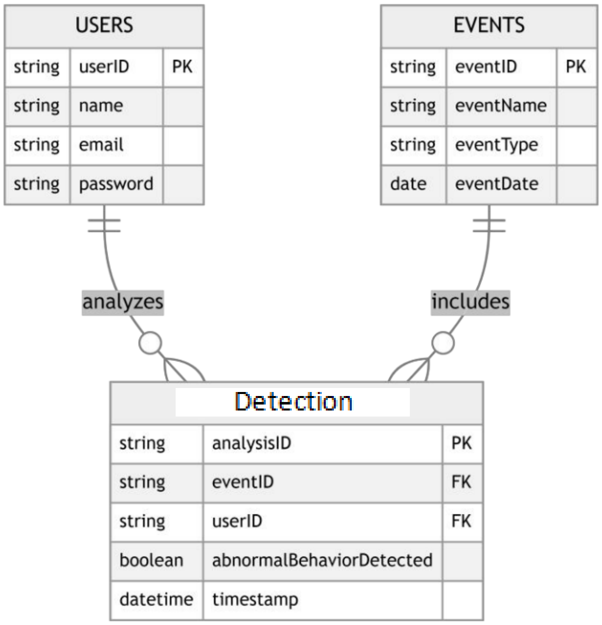
Class Diagram:


Camera
Captures video input.
uses
DetectionSystem
Attributes:
systemID
status
Methods:
startDetection()
processAlerts()
uses
uses
WeaponDetector
Detects weapons.
BehaviorAnalyzer
Detects suspicious behavior.
uses
uses
AlertSystem
Generates alerts.
notifies
SecurityTeam
Responds to alerts.
uses
EventLogger
Logs detection events.

Workflow Flowchart:


Start
Research
Data Collection
Data Mining
Data Cleaning
Data Wrangling
Hyperparameter Training
Model Training
Model Evaluation/ Testing
Completion

Database Diagram:

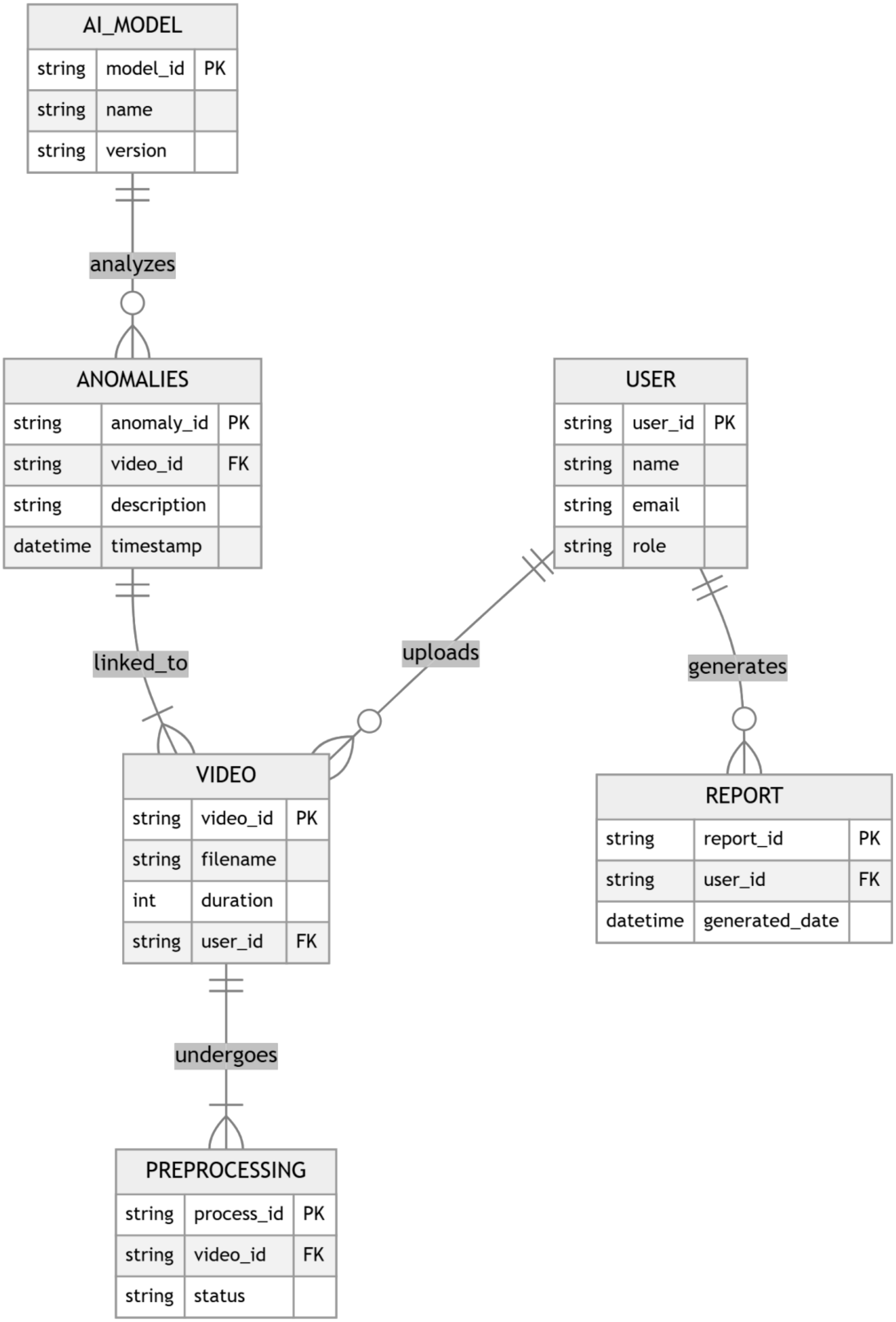

analyzes
includes

USERS		
string	userID	PK
string	name	
string	email	
string	password	

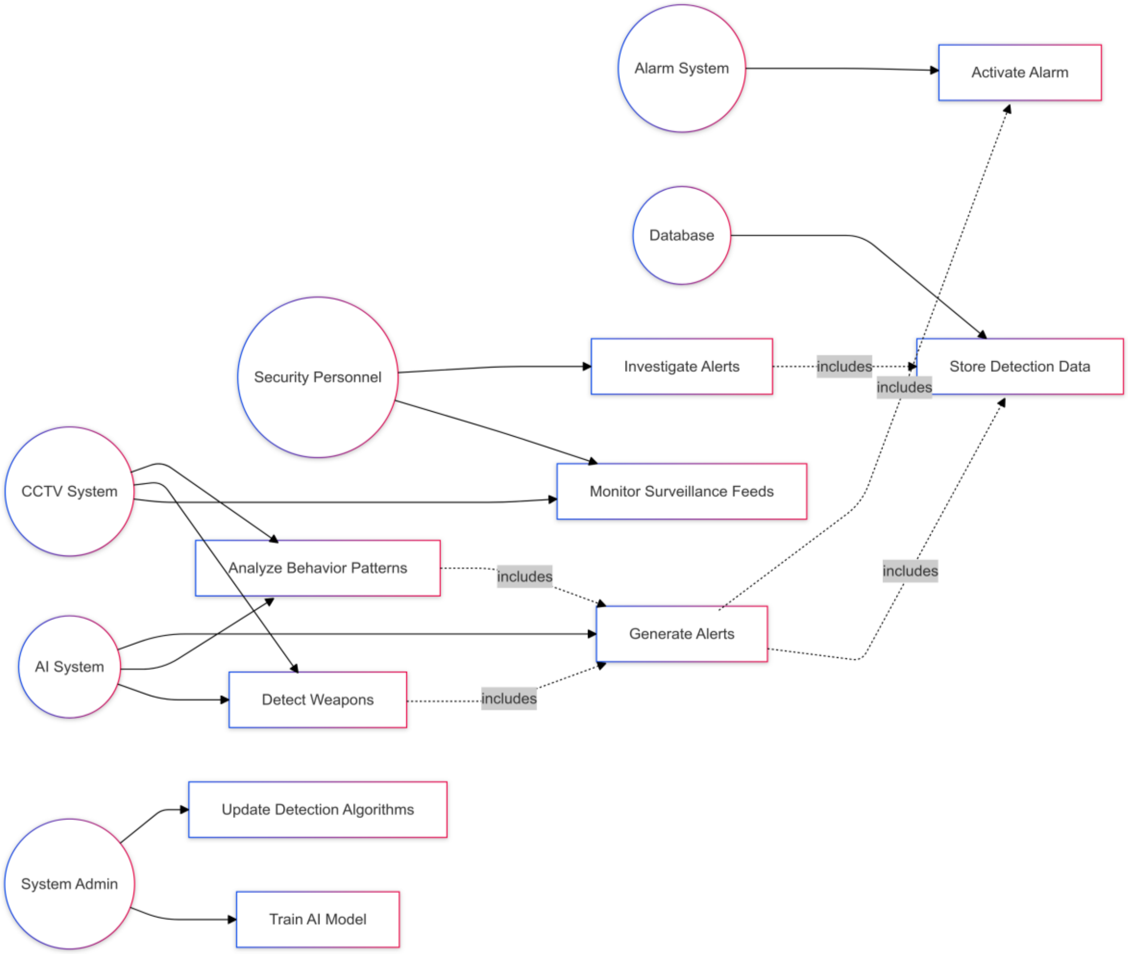
EVENTS		
string	eventID	PK
string	eventName	
string	eventType	
date	eventDate	

Detection		
string	analysisID	PK
string	eventID	FK
string	userID	FK
boolean	abnormalBehaviorDetected	
datetime	timestamp	

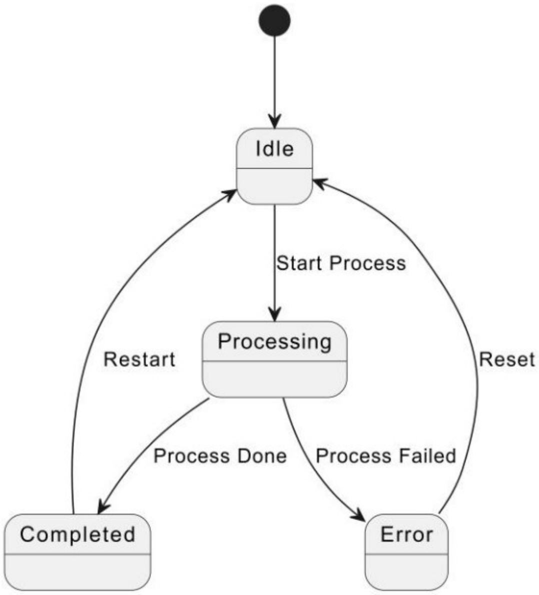
ER Diagram:


AI_MODEL
string | model_id | PK
string | name
string | version
analyzes
ANOMALIES
string | anomaly_id | PK
string | video_id | FK
string | description
datetime | timestamp
USER
string | user_id | PK
string | name
string | email
string | role
linked_to
uploads
generates
VIDEO
string | video_id | PK
string | filename
int | duration
string | user_id | FK
REPORT
string | report_id | PK
string | user_id | FK
datetime | generated_date
undergoes
PREPROCESSING
string | process_id | PK
string | video_id | FK
string | status

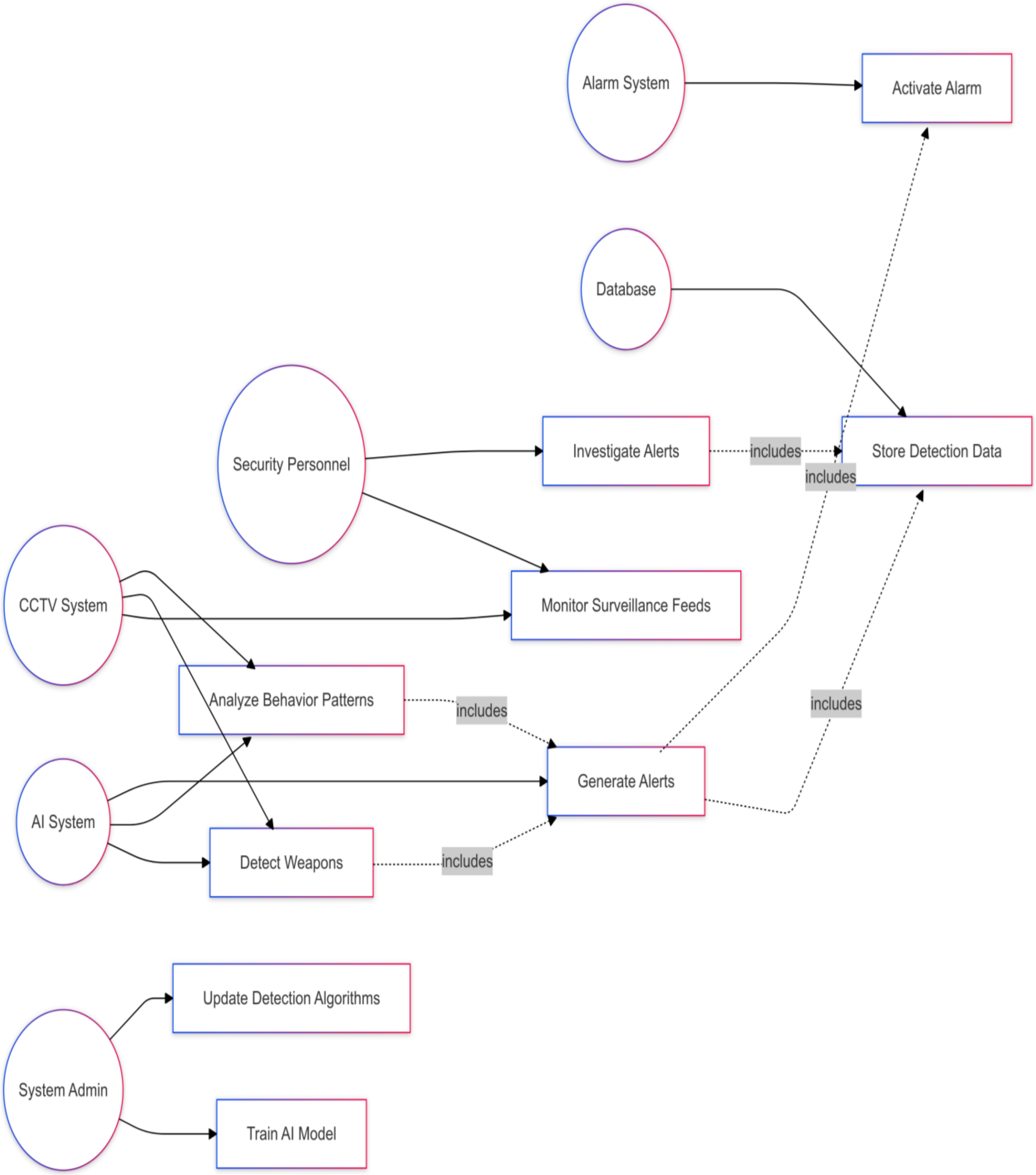
Use Case Diagram:


Alarm System
Activate Alarm
Database
Security Personnel
Investigate Alerts
includes
Store Detection Data
includes
CCTV System
Monitor Surveillance Feeds
Analyze Behavior Patterns
includes
includes
Generate Alerts
AI System
Detect Weapons
includes
Update Detection Algorithms
System Admin
Train AI Model

State Machine Diagram:


Idle
Start Process
Processing
Restart
Reset
Process Done
Process Failed
Completed
Error

Data Flow Diagram: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Activate Alarm
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AI System
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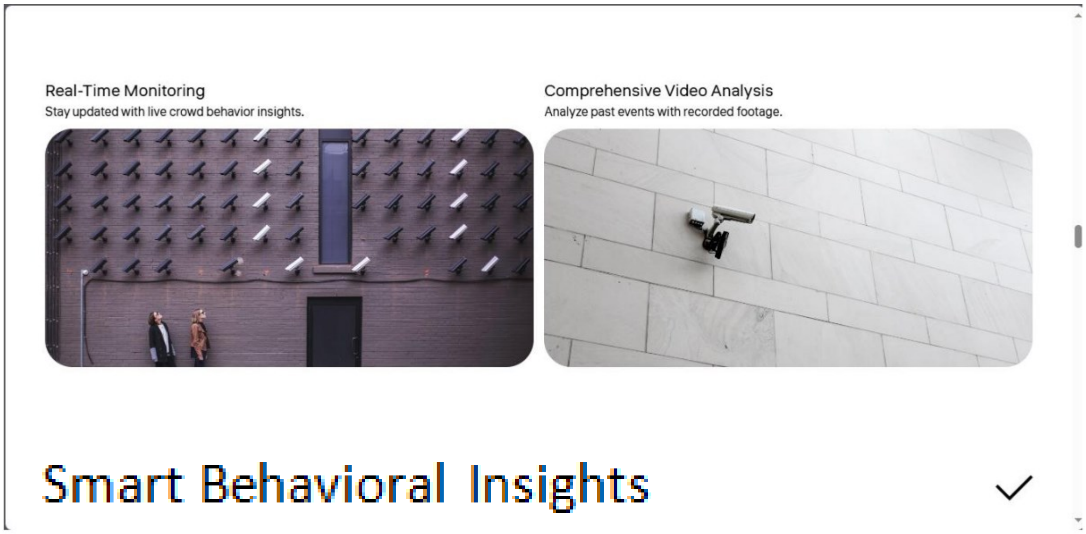
Train AI Model

PROTOTYPE UI



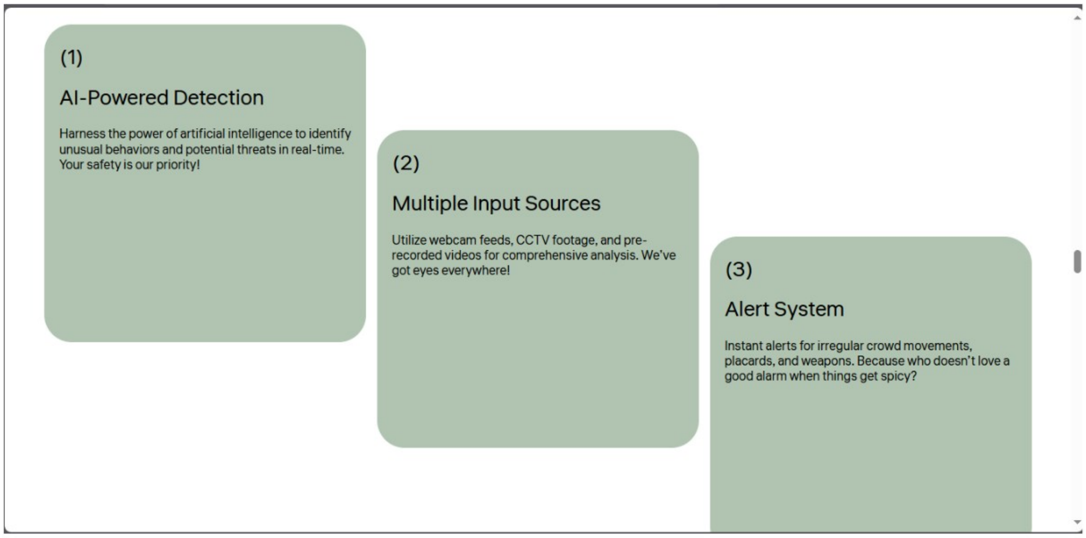
Real-Time Monitoring

Stay updated with live crowd behavior insights.

Comprehensive Video Analysis

Analyze past events with recorded footage.

Smart Behavioral Insights ✓



(1)

AI-Powered Detection

Harness the power of artificial intelligence to identify unusual behaviors and potential threats in real-time. Your safety is our priority!

(2)

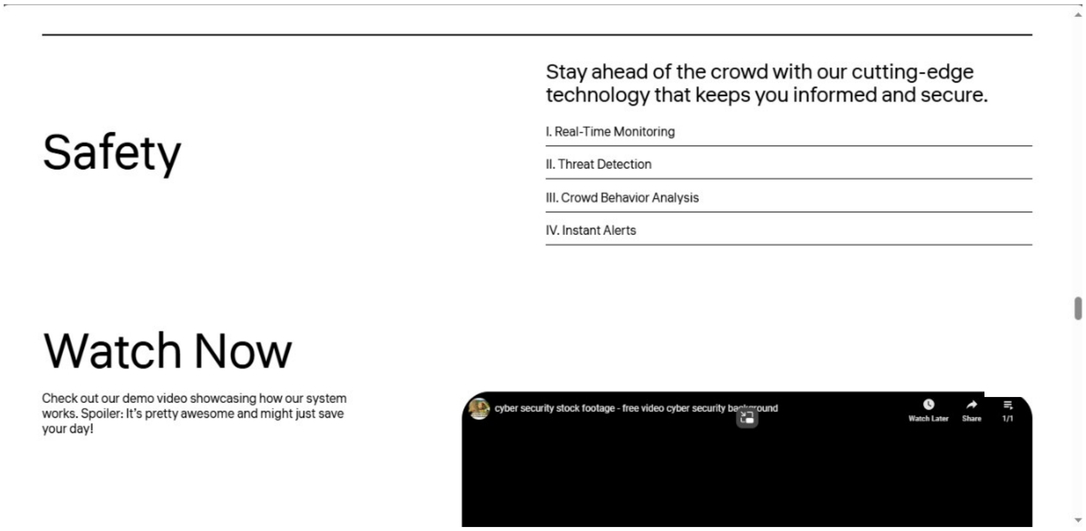
Multiple Input Sources

Utilize webcam feeds, CCTV footage, and pre-recorded videos for comprehensive analysis. We've got eyes everywhere!

(3)

Alert System

Instant alerts for irregular crowd movements, placards, and weapons. Because who doesn't love a good alarm when things get spicy?



Safety

Stay ahead of the crowd with our cutting-edge technology that keeps you informed and secure.

I. Real-Time Monitoring

II. Threat Detection

III. Crowd Behavior Analysis

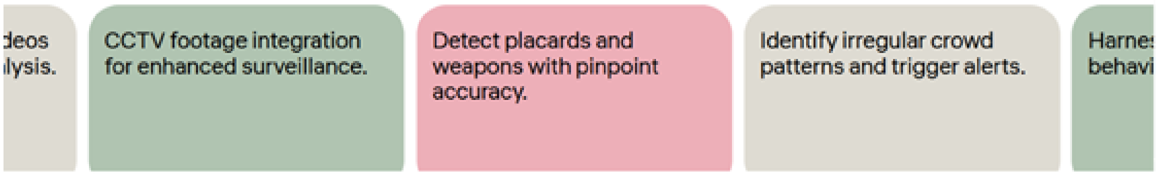
IV. Instant Alerts

Watch Now

Check out our demo video showcasing how our system works. Spoiler: It's pretty awesome and might just save your day!

cyber security stock footage - free video cyber security background
Watch Later
Share
1/1

Features



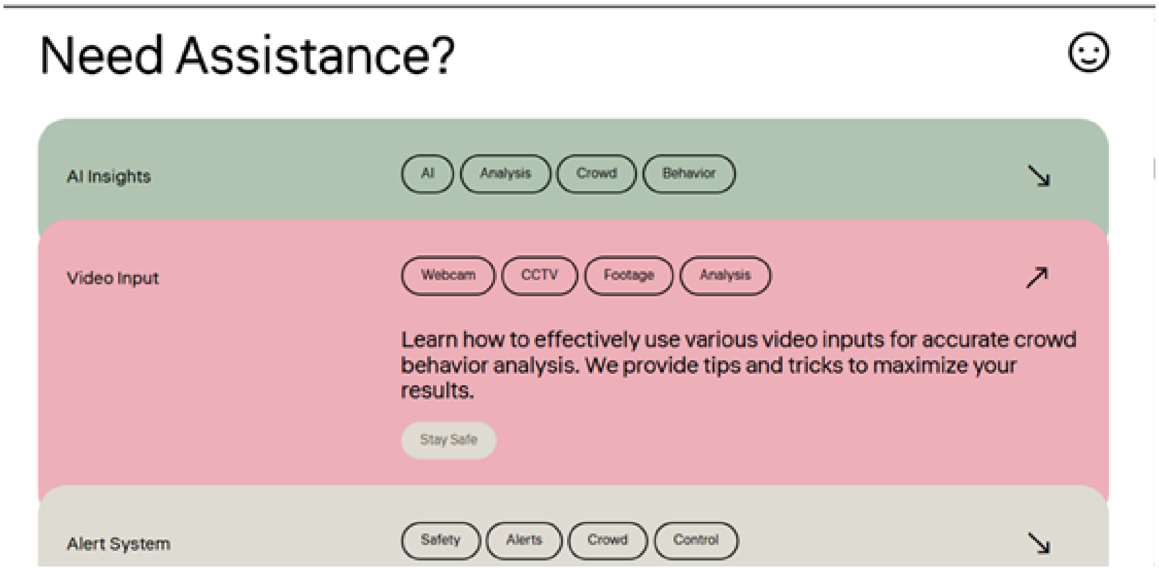
deos
lysis.

CCTV footage integration for enhanced surveillance.

Detect placards and weapons with pinpoint accuracy.

Identify irregular crowd patterns and trigger alerts.

Harnes
behavi



Need Assistance?

AI Insights

AI
Analysis
Crowd
Behavior
↘

Video Input

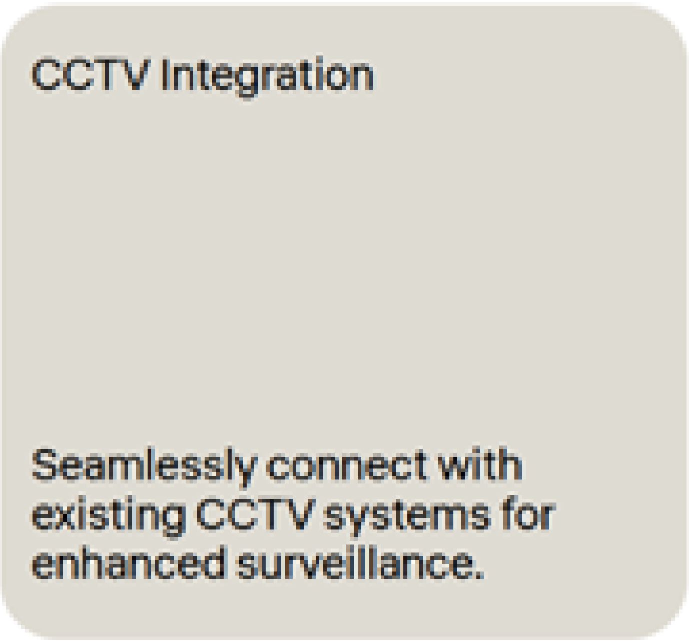
Webcam
CCTV
Footage
Analysis
↗

Learn how to effectively use various video inputs for accurate crowd behavior analysis. We provide tips and tricks to maximize your results.

Stay Safe

Alert System

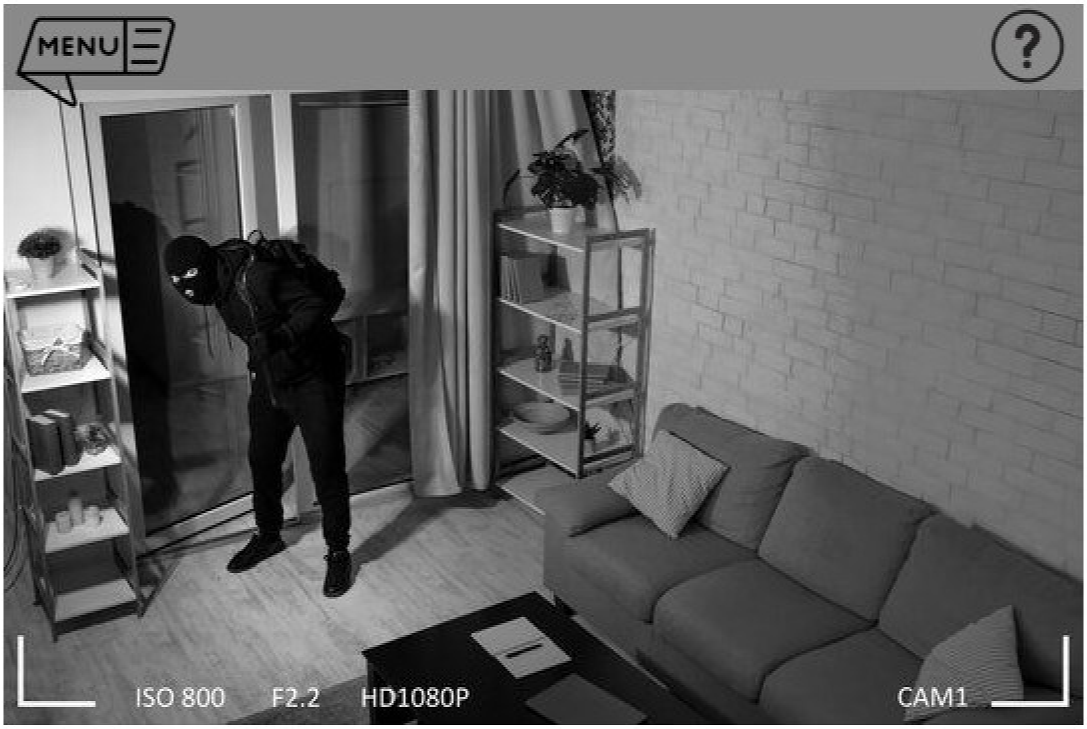
Safety
Alerts
Crowd
Control
↘

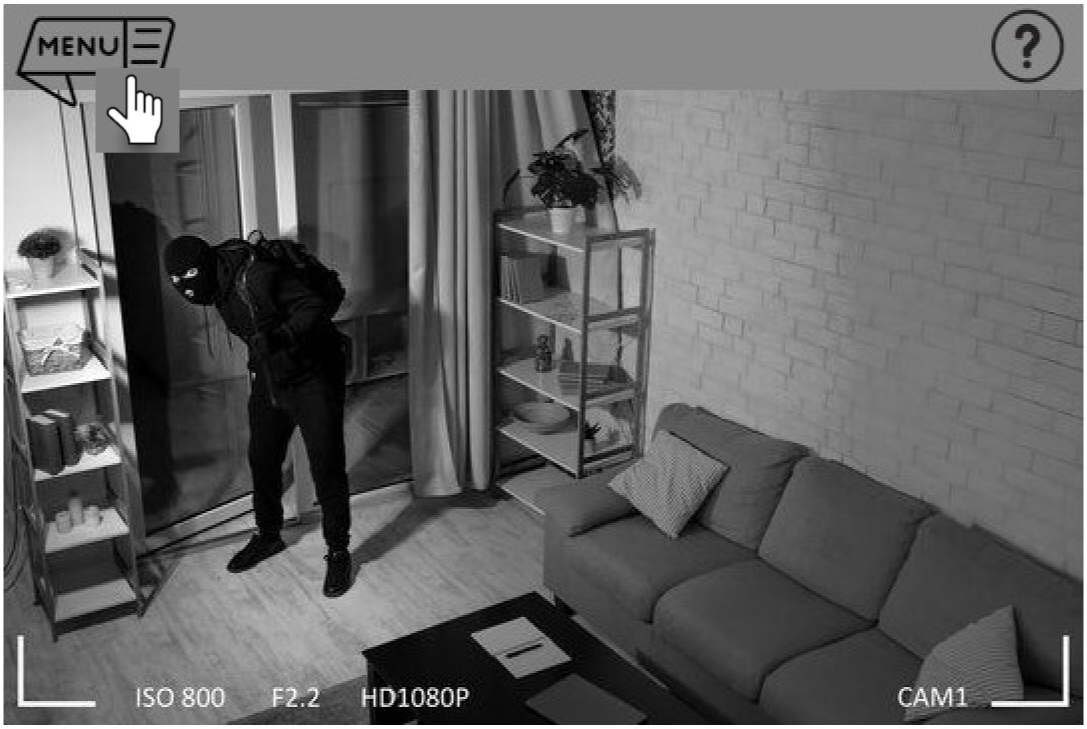


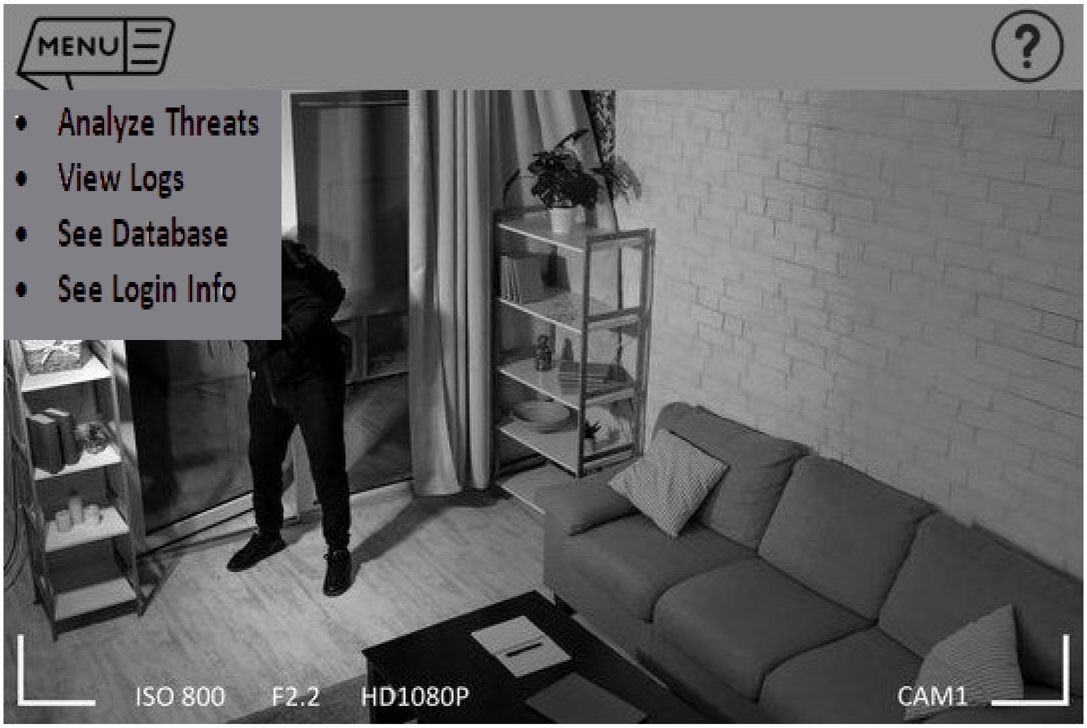
CCTV Integration

Seamlessly connect with existing CCTV systems for enhanced surveillance.

Home Screen Layout:


MENU
?
ISO 800
F2.2
HD1080P
CAM1


MENU
?
ISO 800
F2.2
HD1080P
CAM1


MENU
?
Analyze Threats
View Logs
See Database
See Login Info
ISO 800
F2.2
HD1080P
CAM1