

Jaypee University of Engineering And Technology, Guna

Visionary Surveillance (Project No: AKS2)

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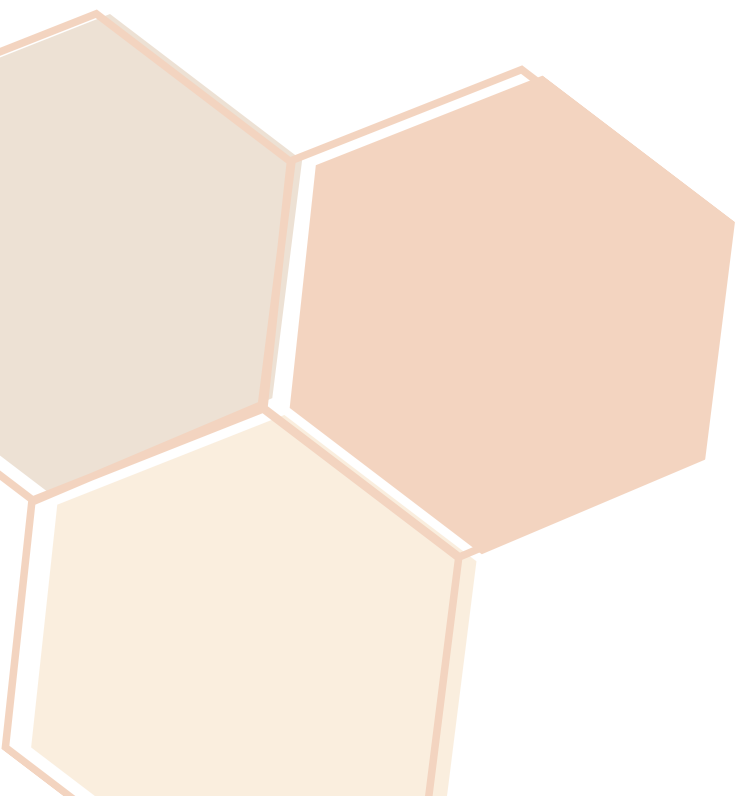
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MOTIVATION

Increase Security

- Decrease the risk of crime while keeping the bystanders safe with a system that can detect potential threats.

Real-time Alert

- Get real-time alerts while making it easier to respond to potential incidents and prevent public safety issues.

Efficiency Improvement

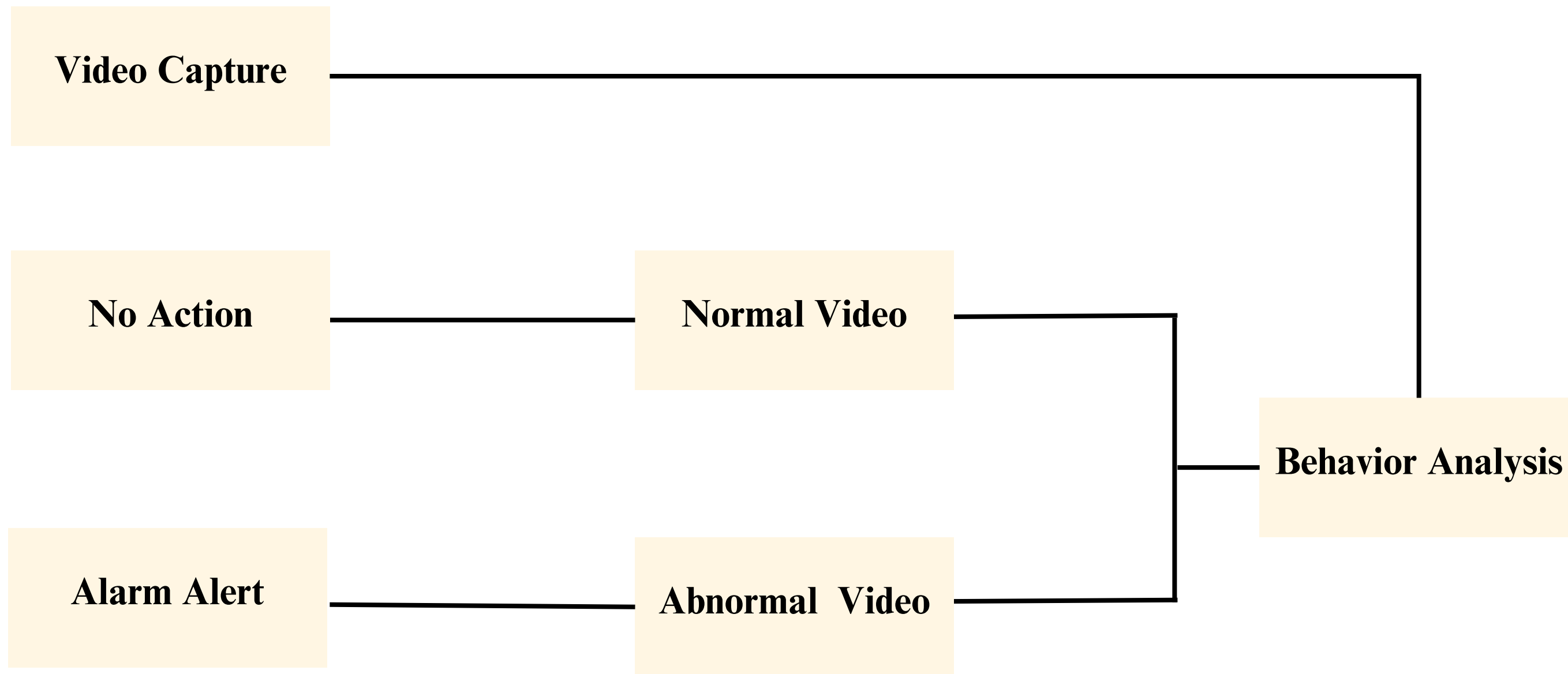
- Reduce the workloads on security personnel and improve surveillance efficiency with an automated system.

INTRODUCTION

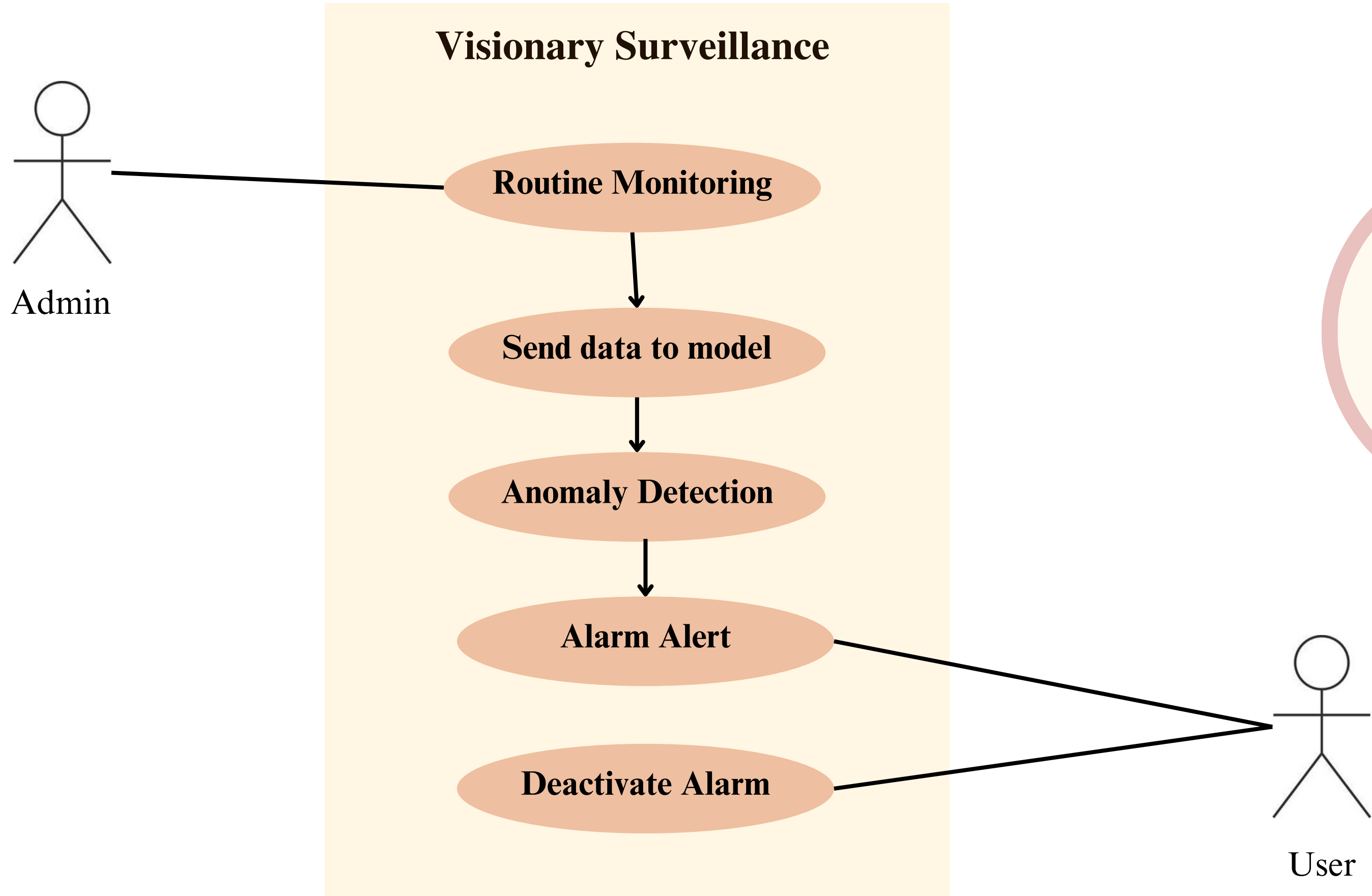
- An advanced technology that leverages AI and cutting-edge sensors to monitor.
- It analyze activities in real-time, ensuring enhanced security and operational efficiency.
- Key Features of the system are:
 - Real-time monitoring.
 - Automatic threat detection
 - Behavior analysis
 - Integration with existing systems



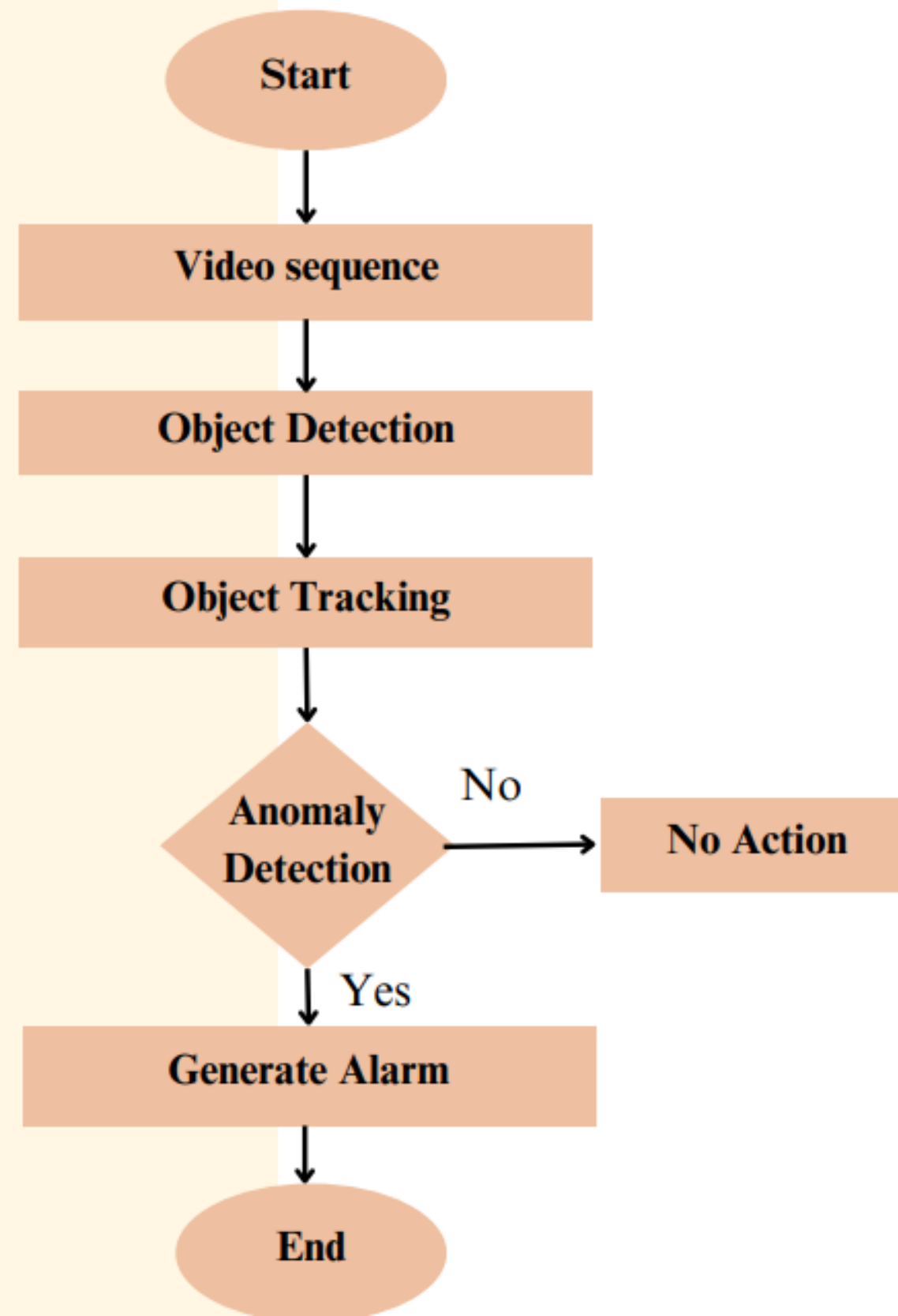
BLOCK DIAGRAM



USE CASE DIAGRAM



FLOW CHART



MODEL DESCRIPTION

1. Convolutional Layer (Conv2D):

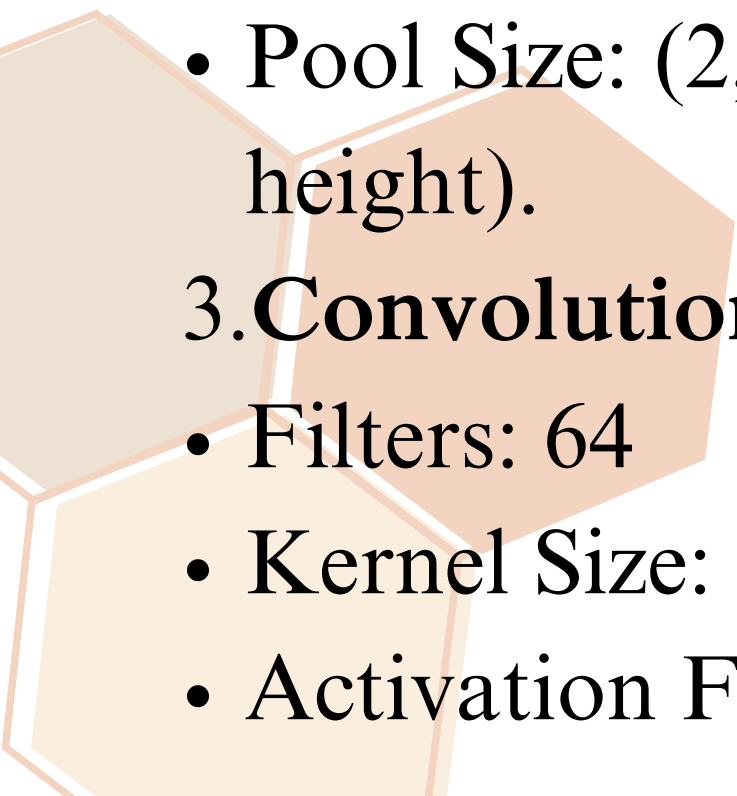
- Filters: 32
- Kernel Size: (3, 3)
- Activation Function: ReLU
- Input Shape: (32, 32, 3) - This is the shape of each input frame (assuming it's a color image with three channels).

2. MaxPooling Layer (MaxPooling2D):

- Pool Size: (2, 2) - This operation reduces the input volume's spatial dimensions (width and height).

3. Convolutional Layer (Conv2D):

- Filters: 64
- Kernel Size: (3, 3)
- Activation Function: ReLU



MODEL DESCRIPTION

4. MaxPooling Layer (MaxPooling2D):

- Pool Size: (2, 2)

5. Flatten Layer:

- This layer flattens the input, transforming it into a 1D array, which is necessary before passing it to the Dense layers.

6. Dense Layer (Fully Connected Layer):

- Neurons: 64
- Activation Function: ReLU

7. Dense Layer (Output Layer):

- Neurons: NUM_CLASSES (2 in your case, since you have abnormal and normal classes)
- Activation Function: Sigmoid - This is appropriate for binary classification problems.

MODEL SUMMARY

Model: "sequential"

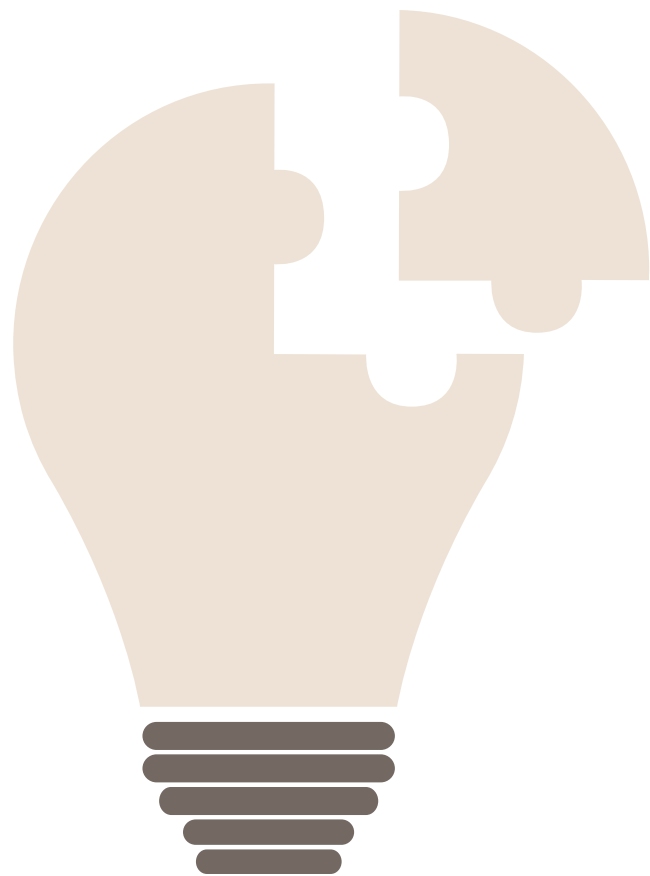
Layer (type)	Output Shape	Param #
=====		
conv2d (Conv2D)	(None, 30, 30, 32)	896
max_pooling2d (MaxPooling2D)	(None, 15, 15, 32)	0
conv2d_1 (Conv2D)	(None, 13, 13, 64)	18496
max_pooling2d_1 (MaxPooling2D)	(None, 6, 6, 64)	0
flatten (Flatten)	(None, 2304)	0
dense (Dense)	(None, 64)	147520
dense_1 (Dense)	(None, 2)	130
=====		
Total params: 167042 (652.51 KB)		
Trainable params: 167042 (652.51 KB)		
Non-trainable params: 0 (0.00 Byte)		

WORK DONE

- Abnormal and Normal Actions Combined - Example 1
- Abnormal and Normal Actions Combined - Example 2
- Abnormal and Normal Actions Combined with alarm sound



EXPECTED OUTCOME

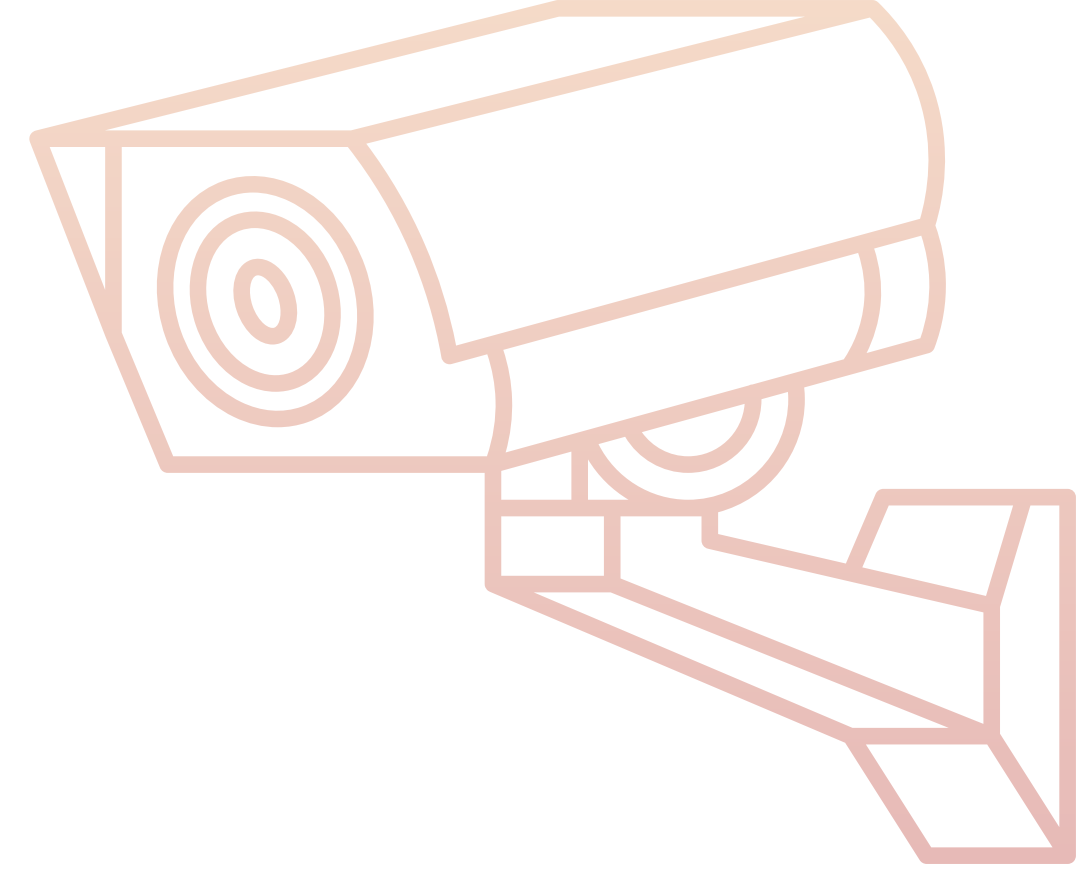


01 Improved situational awareness

02 Effective incident management

03 Object recognition and behavior
analysis

REFERENCES



- Object Detection in Video Surveillance (Ghani et al. 2019).
- Real-Time Surveillance System at a Metro station (Parthiban et al. 2021).
- Surveillance Systems Based on Deep Learning and IoT Paradigm (Cao et al. 2021).





Thank You