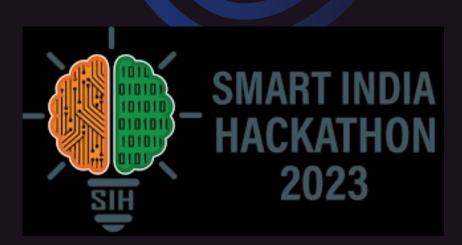
Problem Statement
Code:1416

## AI BASED AUTOMATIC ALARM GENERATION AND DROPPING OF PAYLOAD AT A PARTICULAR OBJECT THROUGH A DRONE

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## Work Process

PATROLLING THE PERIMETER

DETECTING PEOPLE

SENDING ALARM DISPENSING NEEDS









# Detailed Explanation of Work process



- Drones patrol on paths generated for maximum coverage in a residence area.
- Checks via sensors and camera for people in distress and aids them.

- The drone processes the data from sensors to check if the person needs help
- If yes sends alarm about it to control room and automates the process of fetching the needs.
- The package is picked up by the drone and sent out to deliver.

- The drone gets to the target location and calculates the drop.
- The package is dropped with precision so that it reaches the person safely.

## **ALGORITHM**

## Path Planning:

 Develop a path planning algorithm that calculates the optimal trajectory for the payload drop. This trajectory considers factors like wind speed and direction.

## Payload Release Logic:

 Implement logic to decide when and where to release the payload based on the drone's position and the target coordinates.

#### Sensors:

 Use various sensors, such as accelerometers, gyroscopes, and barometers, to monitor the drone's movement and environmental conditions during the descent.

## DETECTION PROCESS

## 1. Enhanced Search and Rescue:

Al drones are crucial for fast search and rescue in disasters and remote areas.

- 2. Object Detection Algorithms: These algorithms help drones identify humans in tough conditions, like low light or dense foliage.
- 3. Thermal Imaging: Thermal cameras on drones find people in darkness or hidden areas by detecting their heat signatures.

## Drone Hardware



### • Drone Type:

 Choose a drone model specifically designed for heavy payload transport. Multirotor drones (e.g., quadcopters or hexacopters) are commonly used for this purpose due to their stability and payload capacity.

### Payload Capacity:

 Select a drone with a payload capacity that matches the weight of the parcels you intend to transport.
 Ensure it can carry the parcels safely.

#### Powerful Motors:

 Opt for drones equipped with powerful motors that can generate enough thrust to lift and control heavy payloads in windy conditions.

#### • Sturdy Frame:

 Look for drones with a strong and durable frame construction, typically made of materials like carbon fiber or aluminum. This provides stability and resilience against wind forces.