

# PROTECTING WOMEN FROM POSSIBLE SAFETY THREATS

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## REAL-TIME MONITORING WITH GENDER DETECTION AND SOS ALERTS

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Objective: Enhance women's safety by  
analyzing real-time CCTV footage  
using advanced machine learning.

# key features

- Gender Distribution Insights -
- Real Time Analysis - Monitors and reports gender distribution in surveillance areas.
- Risk Detection - Flags insignificant gender imbalances.
- Sending SOS Alerts - Using Data of gender distribution, location and current time, sending two-tier SOS Alerts to the authorities.
- Identifies Unusual Pattern - Lone Women at Night can be detected or suspicious gestures to preempt potential threats.

# innovation and differentiation

1. Two Tier SOS System -
  - Orange Alert -
    - Triggers when a lone women is detected at night or when there is significant gender imbalance.
    - Notifies monitoring personnel.
  - Red Alert -
    - In High Risk Scenarios like hotspots, late night and suspicious gesture.
    - Action Taken - Send SOS to authorities with critical details.
1. Contextual Awareness - The system intelligently factors in time, location and crowd dynamic.

Gesture Recognition - Integration of gesture analytics, will enable the SOS alert.

# feasibility

- Real-time Gender Detection: Achievable using current ML models, but accuracy can fluctuate based on environmental factors like lighting or crowd density.
- Night-time Surveillance: Possible through infrared or low-light cameras, though effectiveness might decline in poor conditions.
- Integration with Crime Data: Implementing high-risk zone monitoring is feasible by leveraging crime statistics, allowing for focused alerts in vulnerable areas.
- Alert and Response System: Practical, as it relies on human oversight to assess alerts and dispatch law enforcement when necessary.

# Potential challenges and Drawbacks

- **False Positives/Negatives:** The system may generate unnecessary alerts or miss actual threats, causing inefficiency and possible desensitization (alert fatigue).
- **Accuracy of Gender Detection:** Low-light conditions, low-quality images from CCTV, obstructions, or non-conforming individuals can reduce accuracy, leading to potential misclassifications.
- **Infrastructure Gaps:** Lack of cameras in all locations, especially in remote or under-monitored areas, poses a challenge for full coverage, also low image quality of cameras reduces the system's effectiveness

# plan for remaining time

improve accuracy of the model

reduce the execution time



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