Project Report: Surakshak Women Safety System

# Objectives

The Kawach Women Safety project, also known as Surakshak, aims to enhance the safety and security of women in public spaces through the integration of artificial intelligence and real-time monitoring. The specific objectives include:  
  
- Detect the presence and gender of individuals in a scene.  
- Identify scenarios with lone women, especially at night.  
- Detect women surrounded by groups of men, which may indicate potential threats.  
- Recognize SOS or emergency gestures to prompt timely intervention.  
- Identify geographical hotspots with higher risks for women using analytical insights.  
- Provide actionable analytics to authorities for proactive safety measures.

# Methodology

The approach to the Kawach system is based on developing an authority-centric, AI-powered software solution. The methodology consists of:  
  
1. Monitoring and Alerts in Real Time  
- Machine learning algorithms are used to constantly evaluate live surveillance footage in order to identify irregularities dangerous situations, and distress gestures.   
  
  
2. Models Driven by AI   
- The gender classification model determines gender by analyzing body shape and face recognition.   
- The Gender Distribution Model provides data-driven insights on the makeup of crowds by continuously monitoring the ratio of men to women in a specific area.   
- The Emergency Gesture Detection Model uses machine learning and pattern recognition to identify motions that may be signs of distress, such as raising hands or waving.   
  
3. Data processing and computer vision   
- Video frames are analyzed by advanced computer vision algorithms to recognize, categorize, and identify emergency-related movement or gestures.  
  
4. Cloud Visualization and Infrastructure   
- With visualization tools for creating reports and alert dashboards for authorities, data is processed and stored in a cloud environment.   
  
5. Mapping Hotspots   
- By examining patterns over time, collected data is utilized to pinpoint high-risk areas, assisting in the effective allocation of security resources.

# References

- National Crime Records Bureau (NCRB) Reports (2017–2022)  
- National Family Health Survey-5 (NFHS-5), India  
- Kawach Women Safety Project Document  
- Michelle Obama Quote: “The measure of any society is how it treats its women and girls.”