**Problem Statement:**

Many countries now employ public video surveillance as a primary tool to monitor population movements and prevent crime and terrorism, both in the private and public sectors. Councils, law enforcement, and security management professionals in the UK rely heavily on video surveillance as a tool to fight crime and prevent terrorism. It is now estimated that there are around 5.2 million CCTV cameras in the UK, with one camera for every 13 people. Closed-circuit video surveillance (CCTVs) has existed for over 20 years. Traditionally security Agents and operations managers have been tasked with real-time CCTV camera monitoring to detect abnormal behavior or situations in areas under surveillance or for post-event investigation. Through visual surveillance, human activities can be monitored in sensitive and public areas such as bus stations, railway stations, airports, banks, shopping malls, schools and colleges, parking lots, roads, etc. to prevent terrorism, theft, accidents, and illegal parking, vandalism, fighting, chain snatching, crime, and other suspicious activities. They have needed to review hours or days of footage to extract evidence and understand what occurred at the time of the incident. Due to time constraints, it is difficult to catch on all the relevant data required to Solve the issue. Also, humans are prone to errors making it more difficult to efficiently process the data. It is very difficult to watch public places continuously, therefore intelligent video surveillance is required that can monitor human activities in real-time and categorize them as usual and unusual activities and can generate an alert. The recent decade witnessed a good number of publications in the field of visual surveillance to recognize abnormal activities.

**Solution**:

Our solution is to achieve the detection of abnormal activities using video metadata and Machine learning to build a system for real-time alerts, triggering real-time notifications to action when certain objects Or behaviors are detected or when anomalous activity occurs. In the case of CCTV networks, machine learning-based video content analysis software learns to identify, extract, classify, and index objects in video to empower end users to make video data searchable, actionable, and quantifiable.

**Innovation:**

Information overload is a fact of modern life, creating a tyranny of choice often resulting in analysis paralysis. Too many options make it difficult to understand any one option deeply enough to make an informed decision.

**Methodology:**

In the machine learning domain, learning-based representation techniques achieve feature learning through an iterative optimization procedure. Feature learning is very appealing due to learning complex underlying data representation, especially for complex image recognition tasks, compared to hand-crafted feature descriptors. The learned features acquired through learning a specific problem can be reutilized for solving another problem in a new task, a concept known as transfer learning. This approach has been successfully used in object classification and categorization Domains.

**Conclusion:**

Machine learning has not only changed the way surveillance video is viewed, but also the ways it can be leveraged for increasing security and operational efficiency. It reduces the need for humans to monitor every video surveillance feed and recorded video footage, and it allows security personnel to respond to situations, review footage, and uncover trends so that they can utilize video footage more effectively. This has wide-ranging, positive impacts on both security and operations for local governments, law enforcement agencies, and business institutions, including transit hubs, retail stores, event venues, and others.