

# CCTV Video Reducer

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**Abstract:** *The Video Summarization project introduces an innovative approach to streamline the analysis of Closed-Circuit Television (CCTV) footage using the OpenCV computer vision library. The primary objective is to automatically identify and extract crucial activities within the video, eliminating extraneous content and reducing the overall duration for more efficient review.*

*The project begins with video preprocessing, involving frame extraction to facilitate detailed analysis. Leveraging OpenCV's object detection and tracking capabilities, the system then recognizes significant activities, specifically focusing on the movement of people. Key frames are strategically selected based on predefined criteria, such as sudden motion changes and scene boundaries. These key frames collectively form a concise video summary, capturing essential events and reducing the need for labor-intensive manual review.*

*The implementation of this video summarization system is demonstrated using Python, capitalizing on the powerful features provided by OpenCV. Evaluation metrics, including precision, recall, and F1 score, are utilized to assess the effectiveness of activity recognition and summarization accuracy.*

*The outcomes of this project present a promising solution for enhancing the efficiency of video surveillance systems. By automating the extraction of meaningful content, the Video Summarization project not only accelerates the review process but also optimizes the allocation of resources for surveillance and security applications.*

*This abstract encapsulates the core objectives, methodologies, and potential impact of the Video Summarization project, showcasing its significance in the domain of computer vision and video analysis.*

**Keywords:** Video Summarization, OpenCV, Object Detection, Activity Recognition

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