Title:	Perceptual Attributes in Video Summarization
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Abstract:	The enormous growth of video content in recent times has raised the need to abbreviate the content for human consumption. Information about the movement patterns of detected objects would best be concatenated into a single image. It contracts browsing time and reduces spatiotemporal redundancy, while perpetuating the nub of the clip content and the impression of motion. We address fully automated reference frame selection and frame removal for an automated video shot summary. There is a need for video summaries of a quality that meets the requirements of human users. We introduce object based attributes of human visual system (HVS) such as color, contrast, intensity, size, shape, and speed of an object for information prioritizing and filtering of frames in video summarization. We quantify these attributes based on motion contrast, motion energy, and motion chromism. These emphasize perceptually significant events while simultaneously eliminating perceptual redundancy from the summaries. We present an optimization framework for static and dynamic cameras. We present an optimized selection of salient activities in the video. We introduce the saliency cost function using object based attributes of HVS. Content-based video retrieval and video synopsis are generally considered as two different areas. Given a query image/images, we present an efficient approach for video retrieval based on single summarized database of the videos as an index. It reduces retrieval latency and memory requirement of the system. We propose a novel colorfulness feature for similarity measure and we also use visual saliency as the feature to retrieve the candidate video. Road accident detection and vehicle behavior analysis is of great interest to the research community in intelligent transportation systems. We present perceptual video summarization techniques to enrich the speed of visualizing the accident content from a stack of videos. The problem of vehicle analysis is formulated as an optimization problem. The results establish the versatility of the proposed summarization framework.

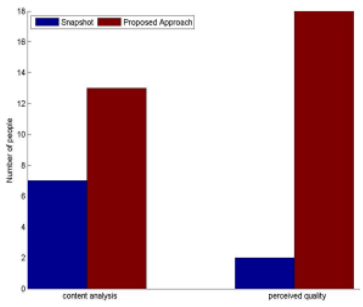
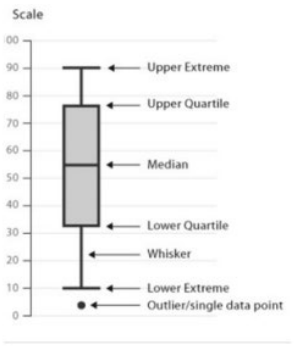


Figure 2.21: Subjective Evaluation for Automatic Video Summary

Figure 1.4: Liu *et al.* Spiral Tape Approach [3].



(a)

Figure 1.5: Massey and Bender Summarization Approach [4].