

Action Key Frames Extraction Using L1-Norm and Accumulative Optical Flow for Compact Video Shot Summarisation

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Key frame extraction is an important algorithm for video summarisation, video retrieval, and generating video fingerprint. The extracted key frames should represent a video sequence in a compact way and brief the main actions to achieve meaningful key frames. Therefore, we present a key frames extraction algorithm based on the L1-norm by accumulating action frames via optical flow method. We then evaluate our proposed algorithm using the action accuracy rate and action error rate of the extracted action frames in comparison to user extraction. The video shot summarisation evaluation shows that our proposed algorithm outperforms the-state-of-the-art algorithms in terms of compression ratio. Our proposed algorithm also achieves approximately 100% and 0.91% for best and worst case in terms of action appearance accuracy in human action dataset KTH in the extracted key frames.

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