P-ISSN: 2347-4408
E-ISSN: 2347-4734

The results for three test videos randomly selected from YOUTUBE and The Open Video Project- videos action data is presented in Table 1. The Figure 2 is the plot of frame dissimilarity of video 1. The frame numbers that have crossed the threshold value have been selected as key frames. Figure 3 presents results of our method, preview of generated summaries of test videos, Video 1, Video 2, and Video 3 respectively.

The precision and recall comparisons between our method and Angadi et al. [9] are shown in Table 2. It is found that our method offers nearly similar result like S. A. Angadi and Vilas Naik [9]. Moreover, it is to be noted that the method proposed by S. A. Angadi and Vilas Naik [9] had high computation complicity as the scheme used color moments. However, our scheme has low computational complicity as it uses simple color histogram.

TABLE 2. PRECISION AND RECALL COMPARISONS.

| S. A. Angadi and Vilas Naik [9] | | Proposed | |
|---|---|---|---|
| ***Precision*** | ***Recall*** | ***Precision*** | ***Recall*** |
| 90.66% | 95.23% | 92.34% | 91.80% |

## V. CONCLUSION

In this paper, we proposed an efficient method for video summary generation. Every color histogram computed for an image in $YC_bC_r$ color space is used to find difference between two frames in a video. The difference between consecutive frames to detect similarity/dissimilarity is computed as Euclidian distance between feature vector containing color of Y(Luminance), $C_b$ (Chrominance of blue), $C_r$ (Chrominance of red) values of frame. The key frames are detected wherever difference value is more than predefined threshold. Experimental results on standard YOUTUBE videos and on The Open Video Project-videos, data reveal that the proposed model is robust and generates video summary efficiently.

Future work will focus on further performance improvement of the proposed scheme by selecting adaptive threshold based on genetic algorithm (GA) and combination of motion, edge and color to increase the efficiency of key frame detection.

## REFERENCES

[1] B. T. Truong and S. Venkatesh, "Video abstraction: A systematic review and classification," ACM Transactions on Multimedia Computing Communications and Applications, vol. 3, pp. 1-37, 2007.

[2] P. Mundur, Y. Rao and Y. Yesha, "Keyframe-based video summarization using Delaunay clustering," International Journal on Digital Libraries, vol. 6, pp. 219–232, 2006.

[3] Y. Hadi, F. Essannouni and R. O. H. Thami, "Video summarization by k-medoid clustering," in Proceedings of the ACM Symposium on Applied Computing, New York, p. 1400–1401, 2006.

[4] S. E. F. De Avila, A. P. B. Lopes, A. Luz and A. Albuquerque Araújo, "VSUMM: A mechanism designed to produce static video summaries and a novel evaluation method,"Pattern Recognition Letters, vol. 32, pp. 56–68, 2011.

[5] M. Furini, F. Geraci, M. Montangero and M. Pellegrini, "VISTO: visual storyboard for web video browsing", in Proceedings of the ACM International Conference on Image and Video Retrieval, p. 635–642, 2007.

[6] M. Furini, F. Geraci, M. Montangero and M. Pellegrini, "STIMO: Still and moving video storyboard for the web scenario," Multimedia Tools and Applications, pp. 47–69, 2007.

[7] H. B. Kekre, S. D. Thepade, and R. Chaturvedi, "Walsh, Sine, Haar & Cosine Transform With Various Color Spaces for „Color to Gray and Back," International Journal of Image Processing, vol. 6, pp. 349-356, 2012.

[8] S. Cvetkovic, M. Jelenkovic, and S. V. Nikolic, "Video summarization using color features and efficient adaptive threshold technique," Przegląd Elektrotechniczny, R. 89NR 2a, pp. 274-250, 2013.

[9] S. A. Angadi and Vilas Naik., "A shot boundary detection technique based on local color moments in $YC_bC_r$ color space," Computer Science and Information Technology, vol. 2, pp. 57-65, 2012.