ISSN(Online): 2320-9801
ISSN (Print) : 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 10, October 2016

Secured Video Accessing Using Improved Compression and Accessing Techniques

Vikas Joshi, Saurabh Sinha, Suraj Thorat, Abhuday Verma, Prof. Laxmi Madhuri.

Dept. of Computer Engineering, Dr. D Y Patil School of Engineering, Pune, India

ABSTRACT: In this server is used to analyze the compressed video which is transmitted through the communication network. Feature matching, key point detection and descriptor calculations are extracted from compressed video at server side or we can say server includes all the above things from compressed video.Feature matching performance may decreases because video compression has adverse effect on each frames of image which is extracted from video. If we use key point which is extracted from uncompressed video and using that we can calculate descriptor from compressed video we can minimize the adverse impact of compression. Key points are provided to the server as side information in proposed system and from compressed video only descriptors are extracted. To address different types of changes in video content we introduce four different type of frame for key point encoding. Each four different frames represents different scene first frame will represent new scene second frame will represent same scene third frame will representslowly changing scene and last fourth scene will represent rapidly moving scene and then determination are done by comparing feature between successive video frame. For encoding of key point for different frame type inter skip and inter modes is used. At last pair wise matching and retrieval of images experiment are conducted for performance evaluation of proposed approach using reality dataset and 720p format video. Due to above approach it offers improved feature matching and image retrieval performance at given bitrate as final result.

KEYWORDS: Coding, H.265/HEVC, key points, matching, prediction, retrieval, SIFT.

I. INTRODUCTION

The basic component of many computer vision algorithm is to extract features from images or videos. Different types of features like shift-invariant, scale-invariant, rotation-invariant etc. are extracted during feature extraction process. To identify the similaritythe features which are extracted from video are repeatedly compared with features in database.Feature matching, key point detection and descriptor calculations are extracted from compressed video at server side or we can say server includes all the above things from compressed video. For still images key point encoding approach is presented by proposed system. By using this approach directly to each frame in image sequence it would increase the bit rate to address this problem, in same manner to conventional inter-frame scheme of prediction in video coding we propose many different key point prediction approach which reduce the number of key point prediction and thus reduce the number of key points that needed to be encode.To encode the original SIFT keypoints from animage and transmit them along with the compressed image to the server. To address different types of changes in video content we introduce four different type of frame for key point encoding. Each four different frames represents different scene first frame will represent new scene second frame will represent same scene third frame will represent slowly changing scene and last fourth scene will represent rapidly moving scene.Pair wisecomparingand image search are performed. Due to above approach it offers improved feature matching and image retrieval performance at given bitrate as final result.

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II. RELATED WORK

Paper Name	Author Name	Proposed System	This paper we refer to
"Rate-accuracy optimization of binary descriptors"	Alessandra Redondi, Luca Baroffio, Joao Ascensoy, MatteoCesana, Marco Tagliasacchi	There are two contributions. First, design an entropy coding scheme that minimizes the number of bits necessary to represent it by seeks the internal ordering of the descriptor. Second, identify which pair-wise comparisons to use when building the descriptor by using different selectionstrategies.	An entropy coding scheme that operates on binary descriptors so as to minimize the number of bits necessary to represent them and methods to select only those descriptor elements which maximize the discriminative power.
"Hybrid coding of visual content and local image features"	Luca Baroffio, MatteoCesana, Alessandro Redondi, Marco Tagliasacchi, Stefano Tubaro	To distributed visual analysis tasksHybrid-Analyze-Then-Compress, paradigm is used. This type of modeldisrupta joint pixel- and local feature-level coding architecture,leading to bitrate savings.	Improving the coding efficiency of both the keypoint location and thedescriptor enhancement layer modules and at extending the approach to different classes of local features.
"Keypoint encoding and transmission for improved feature extraction from compressed images**"**	JianshuChao Eckehard Steinbach LexingXiey	Original SIFT keypoints from a video are encoded and these key points and compressed video is transmitted together to the server.This improve the matching performance.One of the main advantage is decoded images can be watched or stored, and another advantage of our feature preserving image compression approach is that the orientations and scales can be used for geometric verification.	In many mobile visual analysis scenarios, compressed imagesare transmitted over a communicationnetwork for analysis ata server. Processing at the server includes someform of featureextraction andmatching. Image compressionhas been shown to adverse effect on feature matchingperformance.

III. EXISTING SYSTEM APPROACH

Key points are provided to the server as side information in proposed system and from compressed video only descriptors are extracted. Locations,scales, and orientations ofkeypoints extracted fromthe original image are efficiently encoded. Data volume is reduced by selecting relevant yet fragile keypoints as side informationfor the image. Performance of our approach is evaluated using Stanford mobileaugmented reality dataset. Result of this approach will offers improved feature matching and image retrieval performance at low bitrate.

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Disadvantages:

1. In mobile visual analysis scenarios, server is used to analyze the compressed video which is transmitted through the communication network.
2. Compression of image has adverse effect on each frames which is extracted from video.

IV. PROPOSED SYSTEM APPROACH

At pair wise matching and retrieval of images experiment are conducted for performance evaluation of proposed approach using reality dataset and 720p format video. It offers improved feature matching and image retrieval performance at low bitrate as final result.

Advantages:

1. Original SIFT keypoints from a video are encoded and these key points and compressed video is transmitted together to the server.
2. Pairwise matching and retrieval of images experiment are conducted.
3. Preserving video compression approach.

V. SYSTEM ARCHITECTURE

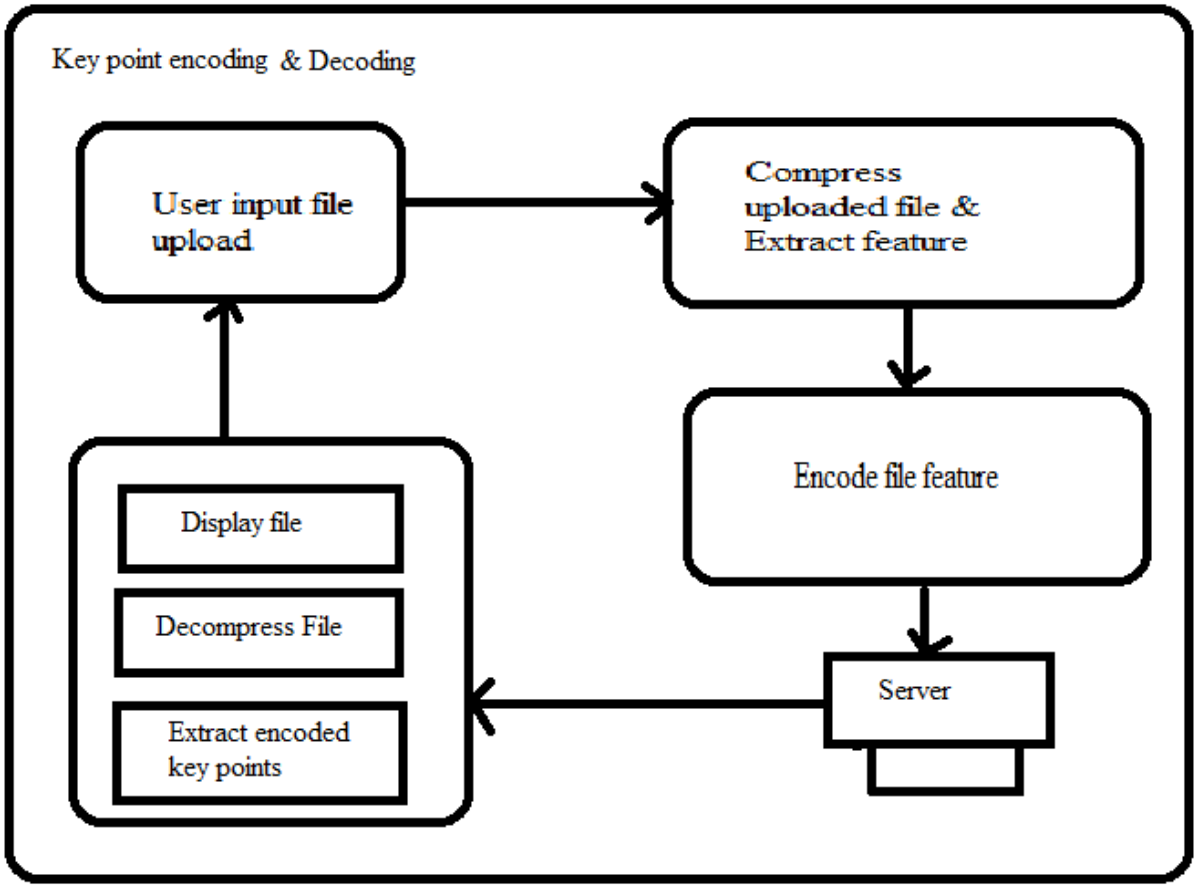

Fig No 01 System Architecture

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VI. CONTRIBUTION

Number of D- or U-frames is to reduce when scene is moving quickly in key point encoding and transmission. We propose many different key point prediction approach which reduce the number of key point prediction and thus reduce the number of key points that needed to be encode.Content based image retrieval systems. With an increasing number of preserved features performance also increases. Visual features are extracted from the acquired content, encoded at remote nodes, and finally transmitted to a central controller that performs visual analysis called as "Analyze-Then-Compress" paradigm. Visual content is acquired at a node, compressed and then sent to a central unit for further processing, according to the "Compress-Then-Analyze" (**CTA**) paradigm which is used in traditional approach.

VII. CONCLUSION

Compression of image has adverse effect on each frames which is extracted from video and if we use key point which is extracted from uncompressed video and using that we can calculate descriptor from compressed video we can minimize the adverse impact of compression.Encoded key points are signaled as side information with the compressed image which is a novel approach for feature-preserving image compression. Our idea shows that the proposed approach significantly improves the matching performance. One of the main advantage is decoded images can be watched or stored, and another advantage of our feature preserving image compression approach is that the orientations and scales can be used for geometric verification. We plan to apply the idea to videos using key point prediction and differential key point coding in future work.

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