Multi-View Distributed Video Coding Based on Discrete Cosine

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Abstract—To investigate the allocation scheme of the multi-view distributed video coding (DVC), the corresponding improvements are proposed correspondingly for traditional multi-view DVC. Traditional multi-view DVC (Wyner-Ziv DVC) encodes for all areas of Wyner-Ziv frame indiscriminately based on Turbo or LDPC. In this kind of encoding process, with regard to violent motor area, decoder can’t decode violent motor area accurately and also send more solicited message to feedback channel, which lowers the code efficiency and decodes inaccurately for violent motor area, it causes a part of area distortion in the image. In this paper, a distributed video encryption algorithm is proposed which based on discrete cosine transform (DCT). The algorithm combines decision criteria of ROI to get violent motor area and non-violent motor area. For violent motor area, to extract low frequency coefficient of DCT as DCT-R algorithm to assist decoder end to decode, decoder utilizes low frequency coefficient of DCT which has already been decoded to carry on bi-directional movement evaluation. Simulation experiment tests and verifies the improved algorithm effectiveness of proposed multi-view DVC in this paper.

Index Terms—Distributed Video Coding; Discrete Cosine Transform; Region of Interest; Multi-Perspective

I. INTRODUCTION

In recent years, with the rapid development of wireless multimedia communication technology, wireless low power monitoring network, disposable camera, medical application, multi-perspective image acquisition and other new video applications occur unceasingly, its characteristic is a large number of resource(such as CPU, energy content of battery, communication broadband) is restricted in application [1]. Therefore, to adapt new demand of video application, it must require low-complexity encoder. Traditional video coding standard(such as MPEG, H.26) adopts technology of motion estimation and motion compensation, it causes encoding complexity is 5-10 times than decoding complexity [2], it’s hard to satisfy the code low-complexity requirement of new video application. Slepian-Wolf and Wyner-Ziv theories of information theory indicate [3]: In encoding and decoding system, decoder end in the precondition of jointed decoding, encoder end carries on encoding independently or jointly for two related information resource [4], and achieving same distortion performance at last. Distributed video coding is based on these two theories, DVC adopts code rule which is completely different with traditional video encoding standard, encoder end adopts independent encoding technique for the figures, videos which collect by wireless multimedia sensor networks, decoder end carries on decoded prediction by excavating interdependency between image frame and frame in video to achieve high efficiency encoding [6]. This kind of distributed video coding has characteristic of low-complexity encoding and good robustness, it’s able to be the same with new video application (For example wireless camera, wireless low power consumption monitoring network, disposable camera, medical application, multi-perspective image collection et.). In some practical applications, video application has great capacities specially, so more and more experts at home and abroad start to follow with interest and deeply study distributed video coding program [7].

From the perspective of information theory: quantity of information and information redundancy capability form information source data, the main purpose of information source encoding is that to compress data, keep information quantity, and decrease information redundancy capability as far as possible [8]. In multi-angle of view, video data posses the overwhelming majority of multi-media information which needs to handle, therefore, the multi-media encoding technology is mainly to study video coding in multi-media data. Video sequence not only has spatial redundancy and time redundancy of one frame image which exists in two successive frames of images, but also posses certain coding redundancy and mind vision redundancy [9].

Multi-media information is necessary data in human communication, mainly including voices, images, videos etc. To make multi-media information carry on transmitting, saving to achieve the level of handling data in real time, bring great pressure to network transmission [10]. Thus, to reduce data volume of video stream during transmission, lighten pressure of network transmission, compression technology of multi-media information is very necessary [11].

As audios, images, videos etc multi-media data include large volumes of redundancy information, so all of them have certain compression space. Such as bit map format of image storage, whatever in row or column direction, interdependency between two pixels is very great, and then the whole image has certain redundancy. And video forms by several consecutive frames of images, not only with spatial redundancy of one frame of image and time redundancy of two successive frames of images, also has
some coding redundancy and mind vision redundancy. Compression technology of multi-media information is very necessary, reducing transmitting data volume of video stream, lightening network transmission capacity.

With the International standard appearance of H.261, H.263, H.264/AVC, MPEG-1, MPEG-2, MPEG-4, MPEG-7, a series of video compressions, video coding technology is tending to mature, it makes video compression and communication go into a new epoch [12]. The goals which H.26X series and MPEG-X series pursuit are same, transmitting codes as little as possible, the images which get by decoding can have higher quality. Favorable encoding technology is able to handle video, audio data in real time, improving efficiency of transmission channel, and then it can promise audio and video quality. Widely use of video conference, telemedicine, video education etc multi-media business, pushing forward the development of human communication. For the pixel value of different occurring probability in video sequence, if we adopt same length of code word to encode pixel value, it will cause certain Bit waste, which is coding redundancy. To solve this kind of redundancy, it adopts different length of code word to encode, short code word for pixel value of high frequency, long code word for pixel value of low frequency.

Distributed video coding constructs video coding program which based on coding theory of lossy information source of Wyner-Ziv. Slepian-Wolf and Wyner-Ziv theories in information theory show [13]: In encoding and decoding system, when decoder in the precondition of joint decoding, encoder carries out joint or individual encoding for two related information source, and achieves same distortion performance at last. DVC is based on these two theories, DVC adopts the coding rule which is different with the traditional video coding standard, encoder adopts technology of individual encoding and joint decoding for images and videos which WMSSNs collects, encoder does not make prediction of frames, decoder predicts decoding to reach high frequency encoding and get more and more attentions and researches of scholars, by utilizing that excavating the interdependency method among frames of images in video.

Presently, typical distributed algorithm of encoding and decoding: Wyner-Ziv video coding [14] which proposed by Girod et al from Stanford University, video coding of Power-efficient Robust high-compression Syndrome-base Multimedia (PRISM)proposed by Ramchandran et al from University of California at Berkeley, video layered video coding of Wyner-Ziv proposed by Zixiang Xiong et al, bringing wavelet transform into distributed video coding program, it adapts to multi-perspective distributed video coding which has high requirement of video quality, state-free distributed video coding proposed by Sehgal et al and so on. Literature [15] based on turbo or LDPC that encode for all areas of Wyner-Ziv frames indiscriminately and uniformly, decoder can’t decode violent motor area accurately and send more solicited messages to feedback channel, it lowers encoding frequency.

Although implementation methods of above several typical programs, these several distributed video coding has some characteristics in common: Encoder regards image frame as mutually independent information source in video stream, do not predict frame while encoding, encodes each frame of image independent which similar with traditional encoding among frames; Decoder passes through time domain interdependency among continuous frames of images, excavating interdependency between frame and frame of image to make a prediction, adopting motion evaluation method, using time domain interpolation for decoded frame of image to get side information, then utilizing this side information to go on decoding and rebuilding for present frame [16]. As DVC eliminates frame prediction of encoder, but puts it in decoder to carry out, so complexity of encoder could be very low, encoder design is very simple, decoder design is very complex, and this kind of design is contrary with traditional encoder mode [17].

Traditional Wyner-Ziv DVC is on the basis of LDPC, adopting uniform encoder mode for all the areas of Wyner-Ziv frames, decoder can’t decode violent motor area accurately and send more solicited messages to feedback channel, it lowers encoding frequency [18]. Against this problem, firstly introducing the DVC theory in this article, and then on this basis, proposing an improved Wyner-Ziv DVC algorithm which is based on DVC algorithm of DCT-R: The first step is that encoder gets violent motor area and non-violent motor area through SAD judgment rule. The second step is to adopt interpolation methods based on DCT-R motion for violent motor area, extracting DCT coefficient of low frequency as DCT-R to assist decoder to decode, and carrying out entropy coding compression for DCT coefficient of low frequency, decoder utilizes decoded DCT coefficient of low frequency to carry on inter-frame bidirectional motion estimation. The third step, for non-violent motor area, do not extract DCT coefficient of low frequency, do not carry on compressing and sending of DCT coefficient of low frequency, adopting traditional motion interpolation algorithm to generate side information and achieving video transmission optimization at last.

The main contribution of this paper is that:
We simply introduced the DVC application background and presented research status.
From the ROI distinguishing algorithm of encoder and generating algorithm of DCT side information of decoder, we proposed new DCT-R distributed video coding program and utilized this algorithm to solve necessary improved problem for typical program.
Finally, the experiment test, performance test and comparison for proposed algorithms which are DVC, Wyner-Ziv video coding algorithm, H.263 intra-frame and inter-frame coding algorithm, traditional JPEG coding algorithm are carried out. The result of simulation experiment shows that proposed multi-view effectiveness can solve the problem preferably, which is decoder end can’t accurately decode larger movement area in images,
improve video encoding efficiency and decoded image quality.

II. THEORY OF MULTI-PERSPECTIVE DVC

Theory of distributed information source coding developed from Slepian-Wolf theory of lossless compressed distributed coding, and Wyner-Ziv theory of loss distributed coding. Next, it was introduced in detail that Slepian-Wolf theory, Wyner-Ziv theory and typical distributed video coding program.

A. Distributed Video Coding

For distributed coding with two or more information source, suppose two individual, same distributed, infinite long random series, Slepian-Wolf gives its code rate limit, figure 1 shows limit diagrammatic sketch. In traditional entropy coding, the code rate could reach \( R_X \geq H(X) \), \( R_Y \geq H(Y) \). Such as area 1 in figure 1, \( X \) and \( Y \) are mutually independent encoding two signals, their entropy are \( H(X) \) and \( H(Y) \) respectively, corresponding code rate are \( R_X \) and \( R_Y \), joint entropy of two signals shows by \( H(X,Y) \), then relationship between total code rate and joint entropy \( H(X,Y) \) is as below formula indicates:

\[
R = R_X + R_Y \geq H(X)
\]

For distributed coding of two information source, referential information only can use in decoder, Slepian-Wolf proves ultimate limit of distributed information source coding code rate, diagrammatic sketch is showed in figure 1. Area 2 in figure 1 gives compressed limit of Slepian-Wolf theory, utilizing interdependency between \( X \) and \( Y \), encoding individually for two signals \( X \) and \( Y \), its total code rate \( R = R_X + R_Y \), also can reach the joint entropy \( H(X,Y) \) of two signals, as below formula indicates:

\[
\begin{align*}
R_X &\geq H(X \mid Y) \\
R_Y &\geq H(Y \mid X) \\
R_X + R_Y &\geq H(X)
\end{align*}
\]

Figure 1. The source rate limit of Slepian-Wolf theory

In figure 1, point \( M \) shows code rate of information source \( X \) is \( R_X = H(X) \), the code rate of information source \( Y \) could be \( R_Y \geq H(Y \mid X) \) while compressing, it can decompress \( Y \) lossless; point \( N \) is in like manner, in information source \( Y \), code rate is \( R_Y = H(Y) \), when doing compression for information source \( X \), only needs that its code rate is \( R_X = H(X \mid Y) \), it’s able to decompress \( X \) lossless.

On the basis of lossless coding theory of Slepian-Wolf, Wyner and Ziv proposed lossy distributed coding theory which utilizing side information to assist to decode. For side information which only can be used by decoder, Wyner and Ziv gave the code rate limit, established distortion theory of distributed lossy information source coding. Figure 2 is the block diagram of lossy encoding and decoding which side information \( Y \) done for information source \( X \), \( X \) and \( Y \) represents two independent, same distributed random series which are related with statistics, information source \( X \) does not refer to side information \( Y \) while compressing, decoder needs to check side information \( Y \) for reference to decode for information source \( X \). \( X' \) represents redevelopment value after \( A \) has been decoded, \( R_{xy}^M(D) \) is distortion-rate function of Wyner-Ziv, which is distortion \( D \) has been given, the lower limit of bit rate distributed coding can get. In addition, encoder and decoder both can use distortion-rate function \( R_{xy}^M(D) \) of side information, distortion \( D \) defines as \( D = E[d(X,X')] \) in distortion-rate function. In the condition of \( D > 0 \), Wyner and Ziv proves that \( R_{xy}^M(D) > R_{xy}^D(D) \).

When mean square error under the condition of distortion, relationship between information source \( X \) and \( Y \) could be showed in \( Y = N + X \), \( N \) and \( Y \) both satisfy Gaussian distribution in independent case, in like manner, in the condition of \( D > 0 \), Wyner and Ziv prove it can get \( R_{xy}^M(D) = R_{xy}^D(D) \). Distributed source encoding, distortion-rate function rate which encoder gets by using side information is same with distortion-rate function rate which decoder gets by using side information, which is distortion performance of these two schemes, are same.

B. Program of Layered Wyner-Ziv Video Coding

Scheme of layered Wyner-Ziv video coding is also a typical distributed video coding program, mainly to solve the problem of video information transmission while bandwidth is limited. Gradable encoding program makes video code rate possess the characteristics of adjustment, encoder only needs to encode video data once, it will be able to let decoder do decode for video stream in the light of video quality, spatial resolution or frame rate requirement, to satisfy different speed rate requirement in video communication. The basic layer is mainly to extract
video basic information in the program of gradable video coding, reinforcement is to extract video details and higher resolution ratio. Channel only need to make sure video data in basic layer transmits reliably and transmits moderate reinforcement data; it is able to solve the case which network switches from high speed to low speed suddenly to adapt all kinds of network transmission.

As figure 3 shows, layered Wyner-Ziv video coding which proposed by Zixiang Xiong. In this program, basic layer extracts video basic information to carry on traditional intra-frame encoded mode; enhanced layer extracts video details and higher resolution ratio to go on video encoding and decoding. The primary encoding process of Wyner-Ziv encoder is that carrying out DCT converting, nested scalar quantizing and SWC code based on LDPC. From the result of literature experiment, result of layered Wyner-Ziv video coding is basically same with MPEG-4/H.26L FGS. The important difference is encoder adopts individual encoded mode to decode for basic layer and enhanced layer, decoder utilizes basic layer to assist reinforcement to carry on joint encoding to get better code efficiency. Therefore, it has better error-resilience performance than MPEG-4/H.26L layered coding, to solve encoding and decoding error problems by error transmission.

As in the practical application, even though reinforcement data meets a loss during transmission, the video image which decoder utilized basic data to recover still can reach watching quality. Thus, layered distributed video coding is able to apply to different Qos network which supports differential service.

III. SCHEME OF THE MULTI-VIEW DISTRIBUTED VIDEO CODING

Encoder of Multi-view Distributed Video Coding (MDVC) does not utilize complex encoder to encode, does not carry out data communication among visual angle, only utilizing perspective to carry on communication to get high quality decoding video in decoder, making it excel traditional multi-view coding. As MDVC monitoring system adopts several cameras to observe one and the same scene in many respects, so video data volume which needs to handle is really great, but the images which several cameras get at the same time should exist certain relationship in space. In the special MDVC area, side information not only gets from one and the same visual angle, but also can get from adjacent angles through spatial interdependency.

![Figure 4](image-url)  
Figure 4 is a multi-view DVC block diagram, it consists of 3 cameras in total, so there exists three visual angles, the middle visual angle is primary one, WZ camera adopts independent coding, it needs to use self-view information and assistant view information to carry on joint decoding while decoding, which is MDVC mode; the other two adjacent visual views are assistant one which adopts H.264/ACV intra-frame encoding and decoding, decoder utilizes view convert to transform it into spatial side information for WZ decoder reference. From figure 1, it can be seen that side information in multi-view DVC program mix together from two part; One is inside visual angle, it adopts Motion Compensated Temporal Interpolation (MCTI); the other is inter-view, adopting Homography Compensated Inter-view Interpolation (HCII). Fused side information is getting by mixing together inter-view side information and inside one, in this case, the video quality which has been decodes is higher. Figure 5 is the decoding structure of MDVC. Cam2 is primary view, Cam1 and Cam3 are assistant one, in Cam2, frame WZ and I were got respectively by Slepian-Wolf decoder of DVC, H.264/AVC intra-frame encoding and decoding, frame C was got from H.264/AVC intra-frame encoding and decoding in Cam1 and Cam3.

![Figure 5](image-url)  
Figure 5. Decoding structure of distributed multi-view video coding
coefficient of DCT as DCT-R algorithm to assist decoder to decode, decoder utilizes DCT low frequency coefficient which has been already decoded to evaluate bidirectional movement, adopting DCT motion interpolation to generate the best side information. But for non-violent motor area, do not extract DCT low frequency coefficient, do not compress and transmit DCT low frequency coefficient, adopts traditional motion interpolation method to generate side information and come true transmission optimization at last.

For some violent motor area in frame W of primary view, traditional multi-view DVC can’t generate time side information accurately, and integrating time side information with spatial side information completely to generate fused side information to decode Wyner-Ziv frame in primary view. Regarding this problem, it was given a brand-new solution which is based on multi-view distributed coding algorithm of Macro block difference, in primary view, through judgment rules of ROI to get violent and non-violent motor area. For violent motor area, side information was generated by integrating time and spatial side information. The generated algorithm of time side information adopts DCT motor evaluation method; but for non-violent motor area, adopts traditional motor interpolate algorithm to generate time and spatial side information. DCT low frequency coefficient is used to assist decoder to decode. As DCT low frequency efficient includes important visual information of image, so it was chosen as assistant information to assist decoder to decode.

A. Judgment Rules

In the previous motor evaluation method based on hash code, encoder extracts all has bits of macro block of frame W, transmits it to decoder to assist side information to generate. However, in a same group of video sequence, only little part of image macro blocks to move greater, as motion vector of many image macro blocks is zero or smaller. For image macro block which is zero or smaller, it can get high quality side information by adopting motion compensated interpolation. Thus, in this chapter, adopted 8x8 macro block judgment based on SSH criterion at the encoder end, if it’s greater than specific value, then doing ROI sign which is ROI macro block, or do not do any sign for target macro block. \( X_n \) represents present frame, \( X_p \) represents last key frame, so SSH criterion of this article is as below formula:

\[
SSH = \sum_{(x,y) \in R} | X_n(x, y) - X_p(x, y) |
\]  

(3)

In above formula, \( B_{ij} \) represents a certain 8x8 macro block, \( x \) and \( y \) are pixel abscissa and ordinate respectively. Utilizing SSH value is greater or equal to a certain specific value which has been calculated, regarding that image macro block does greater movement, then doing ROI mark for targeted macro block. In this program, encoder end extracts DCT low frequency coefficient from ROI sign as DCTH to assist decoder end to decode, it makes encoder decode image macro block which has big movement more accurately.

B. Encoding and Decoding Framework of Distributed Video

Figure 6 is the whole process framework of DCT-R on the basis of DCT and ROI distributed video coding algorithm, in this article, used violent motor macro block as ROI macro block, and exacted DCT low frequency coefficient of ROI macro block to assist decoder end to carry on motion evaluation to improve decoder end efficiency and quality of decoding image. Encoder end uses criterion of macro block SSD to judge 8x8 macro block for Wyner-Ziv frame, if greater or equal to certain specific value, then carrying out macro block ROI sign, extracting DCT low frequency coefficient as DCT-R algorithm to assist decoder end to decode, and doing compression of entropy coding for DCT low frequency coefficient; or carrying out LDPC encoding for unmarked macro block directly. Encoder end adopts traditional intra-frame coding for key frame to assist decoder end to decode Wyner-Ziv frame.

If decoder end receives DCT low frequency coefficient, then will do bidirectional movement evaluation on the basis of DCT for targeted macro block; if decoder end doesn’t receive DCT low frequency coefficient, then will adopt motor compensated interpolation method to generate side information for targeted macro block. Utilizing algorithm which proposed in this article to get the best side information to decode frame \( W \), and then rebuilding, IDCT and inverse quantization to get decoding frame \( W' \).

C. Side Information Generation

Motion vector strand or fall is vital for side information quality which decoder gets, reliability of side information which adopts weak motion vector interpolation to get decrease, it influences decoding image quality straightforward. The generated method of side information which decoder end adopts can evaluate more real motion vector, the more accurate which side information gets, the more real which image has been decoded. In this article, to carry on interpolation...
algorithm of bidirectional movement estimation based on DCT for ROI macro block, but for macro block which are not ROI to carry on motion compensated interpolation algorithm to get the best side information. Supposing DCT inverse quantization of ROI is \( H_{a,b} \), \( Z_{a,b} \) represents DCT of all possible referential blocks, \([a,b]\) is the macro block position in frame, then matching criterion in DCT area is as below formula:

\[
\arg \min \left\{ \sum_{(x,y) \in S} | H_{a,b}(x,y) - H_{b,a}(x,y) | \right\}
\]  \( (4) \)

In formula (4), \( x, y \) respectively represents abscissa and ordinate of DCT area, \( S \) represents DCT low frequency coefficient which macro block extracted. Utilizing criterion of formula 4 is able to find the best matching block for ROI, and then calculating its motion vector.

To carry on interpolation algorithm of bidirectional movement estimation for ROI macro block, to calculate \( B_{r} \), which ROI macro block \( B_{r} \) side information.

First of all, decoder end utilizes DCT coefficient of \( B_{r} \) of received ROI macro block, utilizes formula (4) to calculate the best matching block \( B_{r} \) of previous key frame \( K_{p} \) and the best matching block \( B_{r} \) of latter key frame \( K_{r} \).

And then inferring motion vector field \( k_{v}(x,y) \) which \( B_{r} \) relates to previous matching block \( B_{r} \), and motion vector field \( k_{v}(x,y) \) which \( B_{r} \) relative to previous matching block \( B_{r} \).

The formula derivation for referential side information \( B_{r} \) of \( B_{r} \) is as below:

\[
B_{r} = \frac{|k_{v}(x,y)|}{|k_{v}(x,y)| + |k_{v}(x,y)|}
\cdot B_{r}(x + k_{v}(x,y), y + k_{v}(x,y))
\]  \( (5) \)

In formula (5), \( k_{v}(x,y) \) and \( k_{v}(x,y) \) respectively represents component product of motion vector field \( k_{v}(x,y) \) which ROI macro block relative to best matching block in \( x \) and \( y \) direction, finally, let referential side information of each macro block form into side information of a frame image to assist decoding frame \( W \) more accurately.

\[ D. \ Side \ Information \ of \ Spatial \ Correlation \]

Homographic matrix using in formula (6), it is a 3×3 matrix, related views of the two stages is able to use coordinate system of this matrix to convert. Supposing selecting two nodes of \( V_{t} \) and \( V_{t+1} \), both of them monitor same area and adopt transparent motion model, formula (7) is mapping transformation which pixel point of frame \( V_{t} \) towards pixel point of frame \( V_{t+1} \), the 8 movement parameters in formula were got by gradient descent method.

\[
\begin{bmatrix}
\beta & 1 & \vdots x \\
\vdots & a_0 & a_1 & a_2 \\
\vdots & a_0 & a_1 & a_2 \\
\end{bmatrix}
\]  \( (6) \)

\[
x = (a_0 + a_1 x + a_2 y) / (a_0 x + a_1 y + 1)
y = (a_0 + a_1 x + a_2 y) / (a_0 x + a_1 y + 1)
\]  \( (7) \)

In formula (6), \( a_0, a_1, \ldots, a_7 \) is the 8 movement parameters, \( \beta \) is ratio parameter.

\[ \]
comparison of above five algorithms. H.263+ encoder end adopted TMN8, JPEG standard adopted Annex K [51]. Adopting camera and lena two standard sequences, image format is QCIF (176×144), encoding frame number is 100 frames, 30 frames each 30 seconds.

Figure 7 and 8 are decoded images in simulation experiment of this chapter, adopting this chapter’s algorithm and traditional DVC coding algorithm to carry on encoding and decoding for vide sequence, and make comparisons for image quality of video sequence after decoding, PSNR value of frame 21 in figure 7(a) foreman sequence is greater than PSNR value of frame 21 in figure 8(a) foreman; PSNR value of frame 21 in figure 7(b) salesman sequence is greater than PSNR value of frame 21 in figure 8(b) salesmen. According to experiment test and performance comparison, algorithm in this chapter is obviously excel than traditional DVC coding in same code rate, solving encoding problem of larger motion area in images preferably, the algorithm in this chapter not only decreases encoding efficiency of encoder end, but also increases decoded image quality.

Figure 9 is the performance comparison for above several coding, from there it was getting that encoding efficiency of Wyner-Ziv video algorithm is 2dB higher averagely than H.623+ intra-frame method, and the complexity is lower than H.263+ intra-frame, thus it can be seen how obviously the advantage is. However, PSNR value of H.263+ inter-frame is excelled than Wyner-Ziv, it is because that it utilizes a large amount of calculation of inter-frame prediction method while encoding. PSNR value which got by adopting algorithm proposed in this chapter is averagely 1.2dB higher than Wyner-Ziv encoding and decoding system, as the algorithm which

VI. CONCLUSION

In this chapter, first of all, simply introducing DVC application background and present research status, second, from ROI distinguishing algorithm of encoder end and generating algorithm of DCT side information of decoder end, it proposed new DCT-R distributed video coding program and utilized this algorithm to solve necessary improved problem for typical program, finally, carrying out experiment test, performance test and comparison for proposed algorithms which are DVC, Wyner-Ziv video coding algorithm, H.263 intra-frame and inter-frame coding algorithm, traditional JPEG coding algorithm. The result of simulation experiment shows that proposed multi-view effectiveness can solve the problem preferably, which is decoder end can’t accurately decode larger movement area in images, improve video encoding efficiency and decoded image quality.

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