

REVIEW REGION OF INTEREST VIDEO CODING FOR LOW BIT RATE TRANSMISSION OF CAROTID ULTRASOUND VIDEOS OVER 4G WIRELESS NETWORK

¹Kalpana Bansod, ²Nilesh Bodane

Electronics and Communication Engineering,
Rashtrasant Tukdoji Maharaj Nagpur University
Nagpur, India

Abstract: Video transmission is a now a days become well established facility and has many application. Video transmission over wireless network require link reliability. In this paper we present ROI based ultrasound video compression study. For the limited bandwidth in the wireless standard and memory device state-of-art compression technique are required. The bottom-up topographic feature maps and the top-down skin conspicuity map are then combined through a sigmoid function to produce the final saliency map.

INTRODUCTION:

Last decade have shown rapid increase in video based application over wireless standard such as, wimax, LTE and LTE advance. transmission of real time video for application such as video-conferencing telemedicine and video streaming over wireless channels is a challenging task because of high bit error rate in these channels .for the limited bandwidth in the wireless standard and memory device, state-of-art compression technique are required.

Various state-of-art standard and technique such as IEEE802.15 based wireless personal area network(WPAN) IEEE 802.11 based wireless network (WMAN) and fourth generation (4G) mobile telecommunication network , have been developed in the past years to facilitate the high speed communication between the multimedia device.

A popular method to reduce the size of compress video stream is to select a small area of interesting region in each frame to encode them in priority. This is used ROI coding .ROI means region of interest .the various apporch have been used in the literature for ROI finding.

In this paper we attempt to model ROI as combination of the visually attend area indicated by a saliency map and clinically important ones extracted using a state -of art ultrasound carotid plaque, clinical important areas are selected as performed by medical expert has been also added . Medical expert or student their attenuation on frame area rich in diagnostic cue. Silient area need also to be encoded in high quality. First identify original frame and apply to the saliency map. It extract the unwanted part compress it apply to the saliency map gives the output.

REGION OF INTERST

In this paper propose schme collect 10 numbers of carotid ultrasound videos .in each frame roi is identified the frame created by saliency map. This mehod will be attract the attention because of more simplicity. the many method that have been appered fail to incorporate into the saliency map goal oriented information. If the ROI area selected then after that non ROI area in the video or image frame it will blurred using gaussian filter by gaussian filter smooth area high compression ratio can be acheivd using entropy coding .this mehod can be apply to no change in design a new video or image frame.

REGION OF INTEREST EXTRACTION PROCESS:

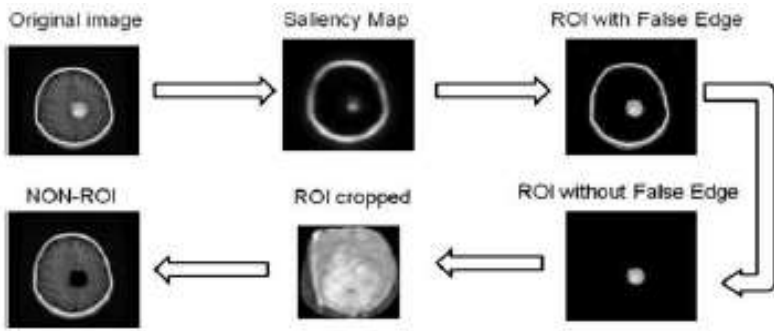


FIG . ROI extraction process

Region of interest in image means the important and meaningful region in the image . The ROI is used for optimization and for ease in image processing, it can reduce computation time. There have been methods to extract ROI in natural images. We propose two methods to determine regions of interest in biomedical images. One is using the mean squared error (MSE), and the other is using a threshold value. But the MSE-based method requires the reference image for calculations while there is difficulty in the threshold method to determine a threshold value. In the second one, Itti's saliency map concept is used. In that, different methods are used to construct the saliency map. Computing, the contrast of each pixel in the image saliency is considered. The regions of interest are extracted in the image or video frame with the help of the saliency map technique. Fig 1 shows the extraction of ROI.

After extraction of ROI, a compression method is used. Lossless compression is used in medical images, but the achievable compression ratio is low. The concept of Region of Interest (ROI) is considered due to some limitations of these lossy and lossless compression techniques. The loss may hamper some of the diagnostically important parts of the medical image. Hence, in some cases, there is a need for some hybrid technique which can preserve the diagnostically important part (ROI) and also provide a high compression ratio. In such cases, these regions should be encoded with higher quality than the nonROI or background of an image. During image transmission, these regions are required to be transmitted first with higher priority.

SALIENCY MAP:

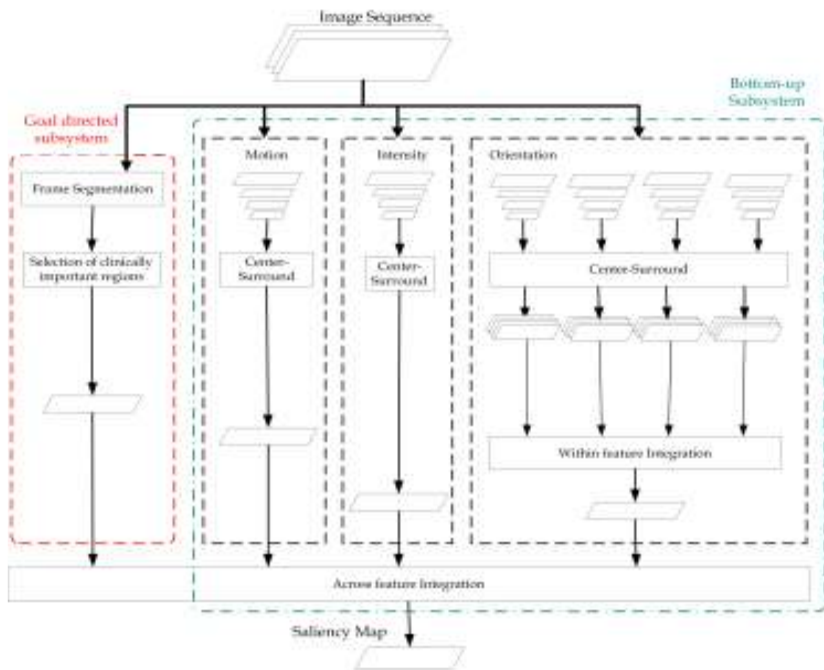


Fig2. The architecture of the saliency map estimator

Video frame the Region of Interest (ROI) is identified as the frame area created by thresholding the saliency map. The latter is obtained by applying the visual attention model, described next, to every video frame. This method of ROI selection, has recently gained increased attention because of its simplicity and rich scientific evidence. However, this kind of information is critical for medical applications because it includes almost all clinically important diagnostic cues. Once ROI areas are identified. The proposed Visual Attention model is illustrated by the architectural diagram of Fig. 1. Saliency map computation is based both on bottom-up and top-down (goal directed) information. The input sequence is supposed to contain regions of interest and non-important

distractors or background areas. The role of the top-down component, depicted on the left, is to bias the attention system towards these regions of interest.

Conclusions and future work:

In this paper a saliency map based visual attention model was applied to identify region of interest for ROI based video coding .this model have two separate information channels, ROI based coding is apply to the gaussian filter and non-ROI coding is to the median filter. Compar to streamline set of carotid ultrasound videos as with application with different videos and image.

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