Abstract

Telemedicine is a field of medicine characterized by telecommunication for clinical health care and transmission of medical images and videos. For transmission, a huge bandwidth is required over the internet. The size of the images that belong to a single patient is very large which contains resolution factor and diagnostic images. So there is a need for efficient compression techniques for compressing these medical images. The regions which are considered to be more important than others in medical images is known as a Region of Interest (ROI) e.g. tumor is ROI in brain MRI. In this work, the ROI is detected by the saliency map technique, after that targets or ROIs be coded at available bits while the remainder of the background or non-ROI part is coded using fewer bits. By this method, the target regions within the video frame or image will be well preserved while the number of bits needed to code the video sequence or images is reduced. Thus, the transmission bandwidth and storage requirements are reduced.

References


19. R. Dilmaghani, A. Ahmadian, M. Ghavami, M. Oghabian, and H. Aghvami, “Multi rate/resolution control in progressive medical image transmission for the region of interest (ROI)
region-of-interest vector quantization,” in Proc. 20th Ann. Int. Conf. IEEE EMBS, Hong Kong,
21. I. Ueno and W. Pearlman, “Region of interest coding in volumetric images with
22. S.B. Gokturk, C. Tomasi, B. Girod, and C. Beaulieu, “Medical image compression based
on region of interest, with application to colon CT images,” in Proc. 23rd Ann. Int. Conf. IEEE
23. Z. Xiong, X. Wu, and D.Y. Yun, “Progressive coding of medical volumetric data using
three-dimensional integer wavelet packet transform,” in Proc. 2nd IEEE Workshop Multimedia
for high-quality compression of medical video,” in Proc. IEEE EMBS Int. Conf. Information
imaging and communications in medicine magnetic resonance imaging images for telemedicine
video coding." Neurocomputing 74, 2011, no. 12, pp. 2114-2122.
29. Doukas, C., Maglogiannis, I.: ‘Region of interest coding techniques for medical image

Index Terms

Computer Science  Image Processing

Keywords

Compression, Region of Interest (ROI), Saliency Map