Abstract

Automatic image segmentation is emerging field in image processing research domain. Many researchers have developed various techniques for segmenting the interested region in an image. Saliency based image segmentation is one of the keen area of research. In a visual scene, the objects which are different from their surroundings get more visual importance and get high gaze attention of the viewer. There are several other applications also where saliency detection is used as core module such as object based surveillance, content adaptive data delivery for low data rate systems, automatic foveation system. In this paper, an efficient multiscale phase spectrum based salient object detection method is proposed. It is observed that,
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a fixed scale of the original image may not predict properly the salient objects. Saliency predicted in one resolution may not predict the same fixation region on another resolution. It is proposed to apply saliency detection algorithm to multiple scales of the original image. As it known that, positional information is contained in the phase spectrum whereas amplitude spectrum contains the presence of frequency components, hence it is proposed to detect saliency using phase spectrum of Fourier trans- form. The proposed method performs much better than other previous methods and predicts more precisely salient objects. In experimental set-up, results of four state-of-art techniques for salient object detection are analyzed compared against the proposed method. The performance of the proposed method is measured on the basis of objective and subjective analysis.

References

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Foveated Imaging  Salient Object Detection  Object Based Segmentation  Computer Vision