



Comparison of Radiation Performance of Different Style Patch Antenna

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ABSTRACT

This paper presents a Composite Cross Correlation technique for detecting eye in varied head pose of face images. The proposed composite template consists of two single templates; the first template is created by taking the left half of a left eye and the second template by flipping the first template horizontally. We suggest other composite templates of entire face template to determine how many eyes should appear, one in profile face image and two in frontal face image. The experimental result was conducted on Psychological Image Collection at Stirling (PICS) database. The database has face images with five head poses in the range -90° , -45° , 0° , 45° and 90° . The results obtained using the proposed technique shows significant improvement in terms of detection rate compared to single cross correlation or using eye template of entire eye images.

Keywords: Composite Cross Correlation, Psychological Image Collection at Stirling, Eye detection, Head poses

INTRODUCTION

In the field of computer vision, facial feature detection is an essential step to implement face recognition system. Facial features detection methods are classified as geometric based, appearance based, statistic based, color segmentation based and template match based methods. Most previous studies related to facial feature detection focus on eye detection as the first phase of extracting the detailed information that is needed [1-2]. The main advantages of templates match based methods over others are; it does not require negative training examples or facial feature points. Creating eye template from face images requires only cropping eye images and then calculating a correlation value between the eye template and all parts of face images. Templates match based methods are also well suited for both high and low-resolution face images [3].

CONCLUSION

The experimental result shows that applying the template of half eye gives a satisfying result in the frontal face image. Furthermore, applying composite template produces better results of eye detection through all orientations. In order to detect head poses in the face image, three templates were generated to represent the entire face; in frontal case and both profile cases. Finally, a detection rate of 98.83% was reported by applying the proposed method on PICS Database while it is 93.87% for the templates which have entire eye image.

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