Abstract

This paper focuses edge extraction from dental x-ray images for the root canal procedure, using the linear prediction (LP). The major issues of processing the dental X-ray images are caused due to the misalignment and the variation in the contrast, by the very modality of acquisition. Also the differences in the shapes and orientations of the teeth pose yet another difficulty in the processing. Thus, in order to overcome these challenges, the LP residual based approach is used in this paper to obtain better root canal edge information. In the present work, the input image is processed by the 10th order LP method to obtain LP residual image. The LP residual of the input image is found to provide better edges as compared to the conventional methods. Also the edge map obtained by the LP method is compared with previous work [7] on zero frequency resonator (ZFR) based edge extraction and is found to give a better edge map. Effectiveness of the LP residual method is confirmed by the visual inspection of the edge map and also from the subjective evaluation.

References


Peli, E, "Feature detection algorithm based on a visual system model," in
Edge Extraction Algorithm using Linear Prediction Model on Dental X-ray Images


Index Terms

Computer Science

Algorithms

Keywords

Edge extraction  dental x-ray image  linear prediction model  zero frequency resonators