DENTAL BITEWING X-RAY IMAGE SEGMENTATION FOR DETERMINING THE TYPES OF TEETH

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ABSTRACT

Image segmentation is the process of grouping the image into several regions based on certain criteria. This final project implements the dental bitewing x-ray image segmentation techniques. There are three stages to perform segmentation, namely the enhancement phase of the image, the image segmentation phase, and the isolation phase. A method that combines homomorphic filtering, adaptive contrast stretching based on homogeneity and adaptive morphological transformations is used for the enhancement phase. Iterative thresholding is used for the segmentation phase. A binary image is obtained from segmentation phase, which is then processed in isolation process, using integral projection. A region of interest (ROI) finally is obtained. We can predict the type of tooth based on the width of ROI.

Keywords: Dental Image Segmentation, Dental Bitewing X-ray Image, Homomorphic Filtering, Adaptive Contrast Stretching, Adaptive Morphological Transformation, Iterative Thresholding, Integral Projection, and Region of Interest