DEVELOP AN EFFICIENT ALGORITHM FOR DENTAL CARIES (DECAY) DETECTION IN X-RAY IMAGE

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ABSTRACT
Detection of dental caries is important for the diagnosis and treatment planning of the dental disease, which has been affecting a very large population throughout the globe. Dental x-rays are a valuable imaging exam that can provide your dentist with detailed evaluations of your teeth and gums for diagnostic and prevention purposes. Detection of dental diseases is decided on the basis of certain criteria, such as based on whether the lesion is within the enamel, dentin or whether it touches the pulp. Development of computer-aided caries detection and diagnosis algorithm has become a priority to help the dentists and specialist for make better and faster decision on diagnosis and furthermore treatment. The majority of studies have focused on developing algorithm that use dental x-ray images to detect and measure tooth damage due to caries. These systems can reveal demineralization that cannot be seen visually. It has been recommended that such systems should be used to augment visual or visual-tactile inspection done by a dentist. Automating the process of analysis of such images is important in order to help dentist procedures. This process comprises many different steps such as: image enhancement, segmentation, feature extraction, detection and classification. However, the experimental result which we obtained in previous segmentation methods that cause the result and reduce the accuracy of work, so it proves the necessity of proper or developed method as an essential step of the algorithm for segmentation of each individual tooth. Due to similarity of features in some areas of teeth like root, which is visible in x-ray images and make suspicion to detect the caries of tooth. Thus, the next important and challenging problem of this research is to find the proper feature extraction or developed method to extract the features of area of tooth which contain the caries and non caries for find the exact area of caries in tooth and eliminate the misjudgment.

KEYWORD
Dental caries detection, image segmentation, feature extraction