

A Literature Review on Dental Disease Diagnosis

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Abstract: Artificial intelligence (AI) has emerged as a transformative technology in various fields, including dentistry. This literature review provides an overview of recent research papers that explore the application of AI in dentistry and its impact on clinical practice. The selected papers cover a wide range of topics, including dental disease detection, dental imaging analysis, dental education, and diagnostic accuracy assessment. In the domain of dental disease detection, the use of AI algorithms has shown promising results in automating the detection of dental pathologies such as caries, periodontal diseases, and lesions. These algorithms have the potential to improve accuracy, enable early intervention, and enhance treatment planning. Furthermore, the integration of AI in dental imaging analysis has enabled advanced image interpretation and segmentation. Studies have demonstrated the effectiveness of AI algorithms in analyzing panoramic radiographs, cone-beam computed tomography (CBCT), and intraoral radiography, leading to improved identification of dental conditions such as root fractures and periapical radiolucent lesions. Moreover, the integration of AI in dental education has revolutionized the learning experience. Virtual reality simulations, computer-assisted learning, and AI-based assessment tools have enhanced student engagement, skill acquisition, and curriculum updates. Overall, this literature review highlights the potential of AI in transforming dentistry. The selected papers contribute to the growing body of knowledge on AI applications in dentistry and pave the way for further research and advancements in this field. The integration of AI has the potential to revolutionize dental practice, improve diagnostic accuracy, optimize treatment planning, and elevate the quality of patient care.

Keywords: Virtual reality simulation, tomography, dental disease diagnosis, Deep learning

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