

Applications

- Image processing methods for cavity detection and assessment
- Incorporation with hardware or intraoral cameras to create a commercial dental caries detection system

Advantages

- Higher accuracy and specificity in detecting cavities, when compared to existing commercial technologies
- This algorithm is easily implemented in a variety of hardware components
- Low-cost
- Non-invasive

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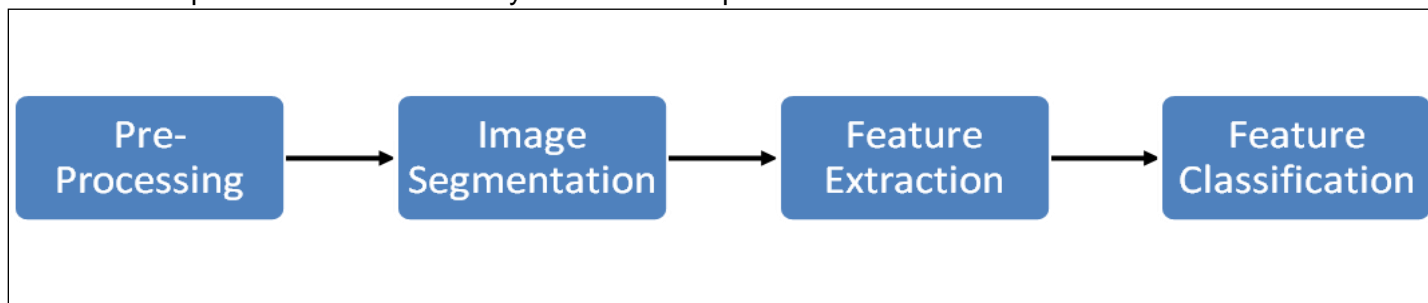
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Market Need

Ninety one percent of adults experience dental caries (cavities) in their lifetime. Management of dental caries demands early detection of carious lesions. Advanced diagnostic and imaging devices can help dentists to detect early caries with high sensitivity, and improve visual and tactile inspection by the dentists which may have low sensitivity and high false negative caries detection. The current technology for caries detection mostly rely on complex and costly imaging tools such as infrared, x-ray and Computed Tomography images.

Technology Summary

This is a new system that includes novel image processing methods to detect dental caries and assess the degree of porosity based on standards such as International Caries Detection and Assessment System (ICDAS). The invented system using intraoral photographs provides quantitative and qualitative feedback to dental practitioners on the presence and severity of dental caries. Preliminary results show higher accuracy and specificity in detecting caries compared to existing commercial technologies. The method can be used to make a commercial dental caries detection system which is affordable and noninvasive. Further, the algorithm does not have stringent hardware requirements, allowing it to be easily implemented in a variety of hardware components that are currently used in dental practices.



Technology Status

Patent pending: U.S. and foreign rights are available.

This technology is available for licensing to industry for further development and commercialization.