Seminar Topic: Dental Disease Detection with Machine Learning

Abstract:

Oral health is a critical aspect of overall well-being, and the early detection of dental diseases is vital in preventing their progression and ensuring timely treatment. Leveraging the power of Machine Learning (ML) in the realm of dentistry offers a promising avenue for automating the process of dental disease detection, leading to more efficient and accurate diagnoses.

With the rapid advancements in computer vision and deep learning technologies, the application of Convolutional Neural Networks (CNNs) in the field of dentistry has shown great promise in automating the process of dental disease detection.

Algorithm - CNN Algorithm:

Convolutional Neural Networks (CNNs) are a machine learning algorithm, specifically a type of deep learning algorithm, that have proven to be highly effective for tasks related to computer vision and pattern recognition.

CNNs have emerged as a powerful tool in the field of dental disease detection, revolutionizing the way oral health conditions are diagnosed and managed. CNNs have significantly improved dental disease detection by automating image analysis, enhancing accuracy, and enabling real-time diagnostics.

This seminar focuses on the utilization of CNNs as a powerful tool for the automated detection of dental diseases from dental images, such as X-rays and intraoral photographs.

In this seminar various dental diseases like caries, periodontics, impacted teeth etc. are detected and localized in panoramic dental x-ray using computer vision.

Implementation:

In this Prediction, we make use of the JUPYTER NOTEBOOK tool and integrate it with Python programming. Jupyter is open-source software used for machine learning, data science, and statistical analysis. This contains a collection of code for visualization and predicting algorithms and data analyzing tool. This helps in the user interface for graphical representation and an easier method for prediction.