Week 1 Project: Teeth Classification - Preprocessing, Visualization, and Model Training

Objective:

Our goal is to develop a comprehensive teeth classification solution that includes preprocessing and visualizing dental images, and a robust computer vision model capable of accurately classifying teeth into 7 distinct categories. This solution is crucial for our company's AI-driven dental solutions, as accurate teeth classification aligns with our strategic goals in the healthcare industry, enhancing diagnostic precision and improving patient outcomes.

Preprocessing and Model Development:

To achieve our objective, we will focus on the following key requirements:

1. Preprocessing:

- Prepare dental images for analysis through normalization, augmentation. This will ensure the images are in optimal condition for model training and evaluation.

2. Visualization

- Visualize the distribution of the classes to understand the balance of the dataset.

- Display images before and after augmentation to evaluate the effectiveness of preprocessing techniques and ensure the transformations are enhancing the dataset appropriately.

3. Model Architecture and Training:

- Use TensorFlow or PyTorch to build a model from scratch tailored to the classification of dental images.

- Train this model to establish a performance baseline. This baseline will be crucial for evaluating the effectiveness of our solution and will provide a foundation for further improvements and optimization.

The completed project will be submitted via a GitHub repository. as We will continue to update and refine the repository as we advance our work on the project.