Image Classification Models Architectures Report

Paper 1:

Very Deep Convolutional Networks for Large-Scale Image Recognition (VGG)

Authors: Simonyan, Karen, and Andrew Zisserman, 2014.

Summary:
This paper introduced the VGG architecture, which demonstrated that increasing network depth using small 3×3 convolutional filters significantly improves image classification performance. VGG models follow a simple and uniform architecture consisting of stacked convolutional layers followed by pooling layers and fully connected layers.

Key Contributions:

- **Use of small (3×3) convolution kernels**
- **Deep architectures (16 – 19 layers)**
- **Simple and uniform design**

Relevance to Our Work:
The baseline CNN model used in this project follows a VGG-style architecture, utilizing stacked convolutional layers with increasing filter depth. This design is well-suited for medical image classification tasks such as teeth classification, where local texture and shape features are crucial.