# Model Evaluation

Model evaluation is a critical phase in the development of AI models, particularly in the field of medical imaging, where accuracy and reliability are paramount. This section outlines the evaluation metrics, benchmarking methods, and comparative analysis employed to assess the performance of the classification and segmentation models developed in this study.

## Classification Models

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | Train Accuracy | Validation Accuracy | Test Accuracy | Precision | Recall | F1-Score | AUC | Loss |
| EfficientNetB2 | 98.06% | 98.06% | 98.06% | 98.19% | 98.06% | 98.12% | 99.82% | 0.0574 |
| EfficientNetB4 | 99.97% | 99.80% | 100% | - | - | - | - | - |

## Segmentation Models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | Dice Coefficient | Jaccard Index | Loss |  |  |  |
| DeepLabv3+ | 0.89 | 0.80 | 0.15 |  |  |  |
| SegNet\_transformer | 0.85 | 0.75 | 0.20 |  |  |  |