**INCEPTIONV3**

**EXPERIMENT 1**

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.79 0.81 67

Clase 1 0.30 0.35 0.32 17

accuracy 0.70 84

macro avg 0.56 0.57 0.57 84

weighted avg 0.72 0.70 0.71 84

Test set AUC Score after fine-tuning: 0.517998244073749

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 159ms/step

Precision (Test Set, Class 1): 0.25

Recall (Test Set, Class 1): 0.29411764705882354

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.4 | 0.001 | 0.00001 | 0.65 | 0.39 | 0.23 | 0.29 | 0.26 |
| 0.5 | 0.001 | 0.00001 | 0.70 | 0.52 | 0.25 | 0.29 | 0.32 |

**EXPERIMENT 2**

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.81 0.81 0.81 67

Clase 1 0.24 0.24 0.24 17

accuracy 0.69 84

macro avg 0.52 0.52 0.52 84

weighted avg 0.69 0.69 0.69 84

Test set AUC Score after fine-tuning: 0.582089552238806

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 247ms/step

Precision (Test Set, Class 1): 0.11764705882352941

Recall (Test Set, Class 1): 0.11764705882352941

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.0001 | 0.0001 | 0.68 | 0.65 | 0.27 | 0.35 | 0.31 |
| 0.5 | 0.0001 | 0.0001 | 0.69 | 0.58 | 0.12 | 0.12 | 0.24 |

**EXPERIMENT 3**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.80 0.82 0.81 67

Clase 1 0.20 0.18 0.19 17

accuracy 0.69 84

macro avg 0.50 0.50 0.50 84

weighted avg 0.68 0.69 0.68 84

Test set AUC Score after fine-tuning: 0.5970149253731344

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 373ms/step

Precision (Test Set, Class 1): 0.2

Recall (Test Set, Class 1): 0.17647058823529413

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.5 | 0.01 | 0.001 | 0.70 | 0.57 | 0.32 | 0.41 | 0.36 |
| 0.5 | 0.01 | 0.001 | 0.69 | 0.60 | 0.2 | 0.18 | 0.19 |

**EXPERIMENT 4**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.82 0.91 0.87 67

Clase 1 0.40 0.24 0.30 17

accuracy 0.77 84

macro avg 0.61 0.57 0.58 84

weighted avg 0.74 0.77 0.75 84

Test set AUC Score after fine-tuning: 0.6830553116769095

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 337ms/step

Precision (Test Set, Class 1): 0.1

Recall (Test Set, Class 1): 0.058823529411764705

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.01 | 0.00001 | 0.82 | 0.49 | 0.67 | 0.24 | 0.35 |
| 0.5 | 0.01 | 0.00001 | 0.77 | 0.68 | 0.1 | 0.06 | 0.3 |

**EXPERIMENT 5**

3/3 ━━━━━━━━━━━━━━━━━━━━ 18s 5s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.78 0.78 0.78 67

Clase 1 0.12 0.12 0.12 17

accuracy 0.64 84

macro avg 0.45 0.45 0.45 84

weighted avg 0.64 0.64 0.64 84

Test set AUC Score after fine-tuning:0.39420544337137836

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 214ms/step

Precision (Test Set, Class 1): 0.35294117647058826

Recall (Test Set, Class 1): 0.35294117647058826

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.5 | 0.001 | 0.000001 | 0.74 | 0.65 | 0.38 | 0.47 | 0.42 |
| 0.5 | 0.001 | 0.000001 | 0.64 | 0.39 | 0.35 | 0.35 | 0.12 |

**EXPERIMENT 5.1**

3/3 ━━━━━━━━━━━━━━━━━━━━ 12s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.75 0.79 67

Clase 1 0.29 0.41 0.34 17

accuracy 0.68 84

macro avg 0.56 0.58 0.56 84

weighted avg 0.72 0.68 0.70 84

Test set AUC Score after fine-tuning: 0.5592625109745392

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 188ms/step

Precision (Test Set, Class 1): 0.08333333333333333

Recall (Test Set, Class 1): 0.11764705882352941

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.001 | 0.000001 | 0.39 | 0.47 | 0.20 | 0.65 | 0.3 |
| 0.5 | 0.001 | 0.000001 | 0.68 | 0.56 | 0.08 | 0.12 | 0.34 |

**EXPERIMENT 5.2**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.82 0.83 67

Clase 1 0.33 0.35 0.34 17

accuracy 0.73 84

macro avg 0.58 0.59 0.58 84

weighted avg 0.73 0.73 0.73 84

Test set AUC Score after fine-tuning: 0.7014925373134328

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 176ms/step

Precision (Test Set, Class 1): 0.05555555555555555

Recall (Test Set, Class 1): 0.058823529411764705

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.001 | 0.000001 | 0.48 | 0.51 | 0.21 | 0.59 | 0.31 |
| 0.5 | 0.001 | 0.000001 | 0.73 | 0.70 | 0.06 | 0.06 | 0.34 |

**EXPERIMENT 5.3**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.87 0.85 67

Clase 1 0.36 0.29 0.32 17

accuracy 0.75 84

macro avg 0.59 0.58 0.58 84

weighted avg 0.73 0.75 0.74 84

Test set AUC Score after fine-tuning: 0.543459174714662

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 320ms/step

Precision (Test Set, Class 1): 0.07142857142857142

Recall (Test Set, Class 1): 0.058823529411764705

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.001 | 0.000001 | 0.50 | 0.64 | 0.25 | 0.76 | 0.38 |
| 0.5 | 0.001 | 0.000001 | 0.75 | 0.54 | 0.07 | 0.06 | 0.32 |

**EXPERIMENT 5.4**

3/3 ━━━━━━━━━━━━━━━━━━━━ 12s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.78 0.75 0.76 67

Clase 1 0.15 0.18 0.16 17

accuracy 0.63 84

macro avg 0.47 0.46 0.46 84

weighted avg 0.65 0.63 0.64 84

Test set AUC Score after fine-tuning: 0.4091308165057067

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 189ms/step

Precision (Test Set, Class 1): 0.2

Recall (Test Set, Class 1): 0.23529411764705882

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.001 | 0.000001 | 0.33 | 0.51 | 0.23 | 0.94 | 0.36 |
| 0.5 | 0.001 | 0.000001 | 0.63 | 0.41 | 0.2 | 0.24 | 0.16 |

**EXPERIMENT 5.5**

3/3 ━━━━━━━━━━━━━━━━━━━━ 12s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.79 0.73 0.76 67

Clase 1 0.18 0.24 0.21 17

accuracy 0.63 84

macro avg 0.49 0.48 0.48 84

weighted avg 0.67 0.63 0.65 84

Test set AUC Score after fine-tuning: 0.5496049165935031

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 181ms/step

Precision (Test Set, Class 1): 0.13636363636363635

Recall (Test Set, Class 1): 0.17647058823529413

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.4 | 0.001 | 0.000001 | 0.60 | 0.51 | 0.24 | 0.47 | 0.32 |
| 0.5 | 0.001 | 0.000001 | 0.63 | 0.55 | 0.14 | 0.18 | 0.21 |

**EXPERIMENT 6**

3/3 ━━━━━━━━━━━━━━━━━━━━ 12s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.88 0.86 67

Clase 1 0.38 0.29 0.33 17

accuracy 0.76 84

macro avg 0.61 0.59 0.59 84

weighted avg 0.74 0.76 0.75 84

Test set AUC Score after fine-tuning: 0.5443371378402106

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 305ms/step

Precision (Test Set, Class 1): 0.15384615384615385

Recall (Test Set, Class 1): 0.11764705882352941

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.0001 | 0.0000001 | 0.64 | 0.52 | 0.24 | 0.35 | 0.29 |
| 0.5 | 0.0001 | 0.0000001 | 0.76 | 0.54 | 0.15 | 0.12 | 0.33 |

**EXPERIMENT 7**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.81 0.94 0.87 67

Clase 1 0.33 0.12 0.17 17

accuracy 0.77 84

macro avg 0.57 0.53 0.52 84

weighted avg 0.71 0.77 0.73 84

Test set AUC Score after fine-tuning: 0.501316944688323

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 142ms/step

Precision (Test Set, Class 1): 0.0

Recall (Test Set, Class 1): 0.0

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.001 | 0.000001 | 0.38 | 0.50 | 0.22 | 0.82 | 0.35 |
| 0.5 | 0.001 | 0.000001 | 0.77 | 0.50 | 0.0 | 0.0 | 0.17 |

**EXPERIMENT 8**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.77 0.82 0.80 67

Clase 1 0.08 0.06 0.07 17

accuracy 0.67 84

macro avg 0.43 0.44 0.43 84

weighted avg 0.63 0.67 0.65 84

Test set AUC Score after fine-tuning: 0.4416154521510096

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 144ms/step

Precision (Test Set, Class 1): 0.15384615384615385

Recall (Test Set, Class 1): 0.11764705882352941

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.0001 | 0.00000001 | 0.39 | 0.52 | 0.23 | 0.82 | 0.35 |
| 0.5 | 0.0001 | 0.00000001 | 0.67 | 0.44 | 0.15 | 0.12 | 0.07 |

**EXPERIMENT 9**

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.81 0.88 0.84 67

Clase 1 0.27 0.18 0.21 17

accuracy 0.74 84

macro avg 0.54 0.53 0.53 84

weighted avg 0.70 0.74 0.72 84

Test set AUC Score after fine-tuning: 0.5013169446883231

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 149ms/step

Precision (Test Set, Class 1): 0.18181818181818182

Recall (Test Set, Class 1): 0.11764705882352941

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.00001 | 0.0001 | 0.75 | 0.62 | 0.38 | 0.35 | 0.36 |
| 0.5 | 0.00001 | 0.0001 | 0.74 | 0.50 | 0.18 | 0.12 | 0.21 |

**EXPERIMENT 10**

3/3 ━━━━━━━━━━━━━━━━━━━━ 13s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.78 0.79 0.79 67

Clase 1 0.12 0.12 0.12 17

accuracy 0.65 84

macro avg 0.45 0.45 0.45 84

weighted avg 0.65 0.65 0.65 84

Test set AUC Score after fine-tuning: 0.49165935030728714

17/17 ━━━━━━━━━━━━━━━━━━━━ 12s 738ms/step

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 140ms/step

Precision (Test Set, Class 1): 0.25

Recall (Test Set, Class 1): 0.23529411764705882

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.001 | 0.000001 | 0.29 | 0.52 | 0.21 | 0.94 | 0.35 |
| 0.5 | 0.001 | 0.000001 | 0.65 | 0.49 | 0.25 | 0.24 | 0.12 |

**DENSENET121**

**EXPERIMENT 1**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.80 0.84 0.82 67

Clase 1 0.21 0.18 0.19 17

accuracy 0.70 84

macro avg 0.51 0.51 0.51 84

weighted avg 0.68 0.70 0.69 84

Test set AUC Score after fine-tuning: 0.6154521510096576

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 201ms/step

Precision (Test Set, Class 1): 0.21428571428571427

Recall (Test Set, Class 1): 0.17647058823529413

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.001 | 0.00001 | 0.55 | 0.63 | 0.28 | 0.76 | 0.41 |
| 0.5 | 0.001 | 0.00001 | 0.70 | 0.62 | 0.21 | 0.18 | 0.19 |

**EXPERIMENT 2**

3/3 ━━━━━━━━━━━━━━━━━━━━ 17s 5s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.80 1.00 0.89 67

Clase 1 0.00 0.00 0.00 17

accuracy 0.80 84

macro avg 0.40 0.50 0.44 84

weighted avg 0.64 0.80 0.71 84

Test set AUC Score after fine-tuning: 0.4574187884108867

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 145ms/step

Precision (Test Set, Class 1): 0.0

Recall (Test Set, Class 1): 0.0

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.0001 | 0.0001 | 0.75 | 0.56 | 0.25 | 0.12 | 0.16 |
| 0.5 | 0.0001 | 0.0001 | 0.80 | 0.46 | 0.0 | 0.0 | 0.0 |

**EXPERIMENT 3**

3/3 ━━━━━━━━━━━━━━━━━━━━ 15s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.58 0.68 67

Clase 1 0.24 0.53 0.33 17

accuracy 0.57 84

macro avg 0.54 0.56 0.51 84

weighted avg 0.71 0.57 0.61 84

Test set AUC Score after fine-tuning: 0.5460930640913082

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 148ms/step

Precision (Test Set, Class 1): 0.24324324324324326

Recall (Test Set, Class 1): 0.5294117647058824

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.01 | 0.001 | 0.50 | 0.48 | 0.23 | 0.65 | 0.34 |
| 0.5 | 0.01 | 0.001 | 0.57 | 0.55 | 0.24 | 0.53 | 0.33 |

**EXPERIMENT 4**

3/3 ━━━━━━━━━━━━━━━━━━━━ 15s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.75 0.79 67

Clase 1 0.29 0.41 0.34 17

accuracy 0.68 84

macro avg 0.56 0.58 0.56 84

weighted avg 0.72 0.68 0.70 84

Test set AUC Score after fine-tuning: 0.5741878841088673

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 123ms/step

Precision (Test Set, Class 1): 0.2916666666666667

Recall (Test Set, Class 1): 0.4117647058823529

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.01 | 0.00001 | 0.67 | 0.59 | 0.31 | 0.53 | 0.39 |
| 0.5 | 0.01 | 0.00001 | 0.68 | 0.57 | 0.29 | 0.41 | 0.34 |

**EXPERIMENT 5**

3/3 ━━━━━━━━━━━━━━━━━━━━ 15s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.84 0.31 0.46 67

Clase 1 0.22 0.76 0.34 17

accuracy 0.40 84

macro avg 0.53 0.54 0.40 84

weighted avg 0.71 0.40 0.43 84

Test set AUC Score after fine-tuning: 0.5346795434591747

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 126ms/step

Precision (Test Set, Class 1): 0.22033898305084745

Recall (Test Set, Class 1): 0.7647058823529411

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.8 | 0.001 | 0.000001 | 0.73 | 0.66 | 0.38 | 0.53 | 0.44 |
| 0.5 | 0.001 | 0.000001 | 0.40 | 0.53 | 0.22 | 0.76 | 0.34 |

**EXPERIMENT 5.1**

3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.83 0.07 0.14 67

Clase 1 0.21 0.94 0.34 17

accuracy 0.25 84

macro avg 0.52 0.51 0.24 84

weighted avg 0.71 0.25 0.18 84

Test set AUC Score after fine-tuning: 0.4872695346795435

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 124ms/step

Precision (Test Set, Class 1): 0.20512820512820512

Recall (Test Set, Class 1): 0.9411764705882353

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.8 | 0.001 | 0.000001 | 0.81 | 0.59 | 0.55 | 0.35 | 0.43 |
| 0.5 | 0.001 | 0.000001 | 0.25 | 0.49 | 0.21 | 0.94 | 0.334 |

**EXPERIMENT 5.2**

3/3 ━━━━━━━━━━━━━━━━━━━━ 15s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.86 0.55 0.67 67

Clase 1 0.27 0.65 0.38 17

accuracy 0.57 84

macro avg 0.56 0.60 0.53 84

weighted avg 0.74 0.57 0.61 84

Test set AUC Score after fine-tuning: 0.6233538191395962

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 113ms/step

Precision (Test Set, Class 1): 0.2682926829268293

Recall (Test Set, Class 1): 0.6470588235294118

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.7 | 0.001 | 0.000001 | 0.65 | 0.60 | 0.31 | 0.59 | 0.41 |
| 0.5 | 0.001 | 0.000001 | 0.57 | 0.62 | 0.27 | 0.65 | 0.38 |

**EXPERIMENT 5.3**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.84 0.55 0.67 67

Clase 1 0.25 0.59 0.35 17

accuracy 0.56 84

macro avg 0.55 0.57 0.51 84

weighted avg 0.72 0.56 0.60 84

Test set AUC Score after fine-tuning: 0.5961369622475856

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 111ms/step

Precision (Test Set, Class 1): 0.25

Recall (Test Set, Class 1): 0.5882352941176471

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.001 | 0.000001 | 0.21 | 0.53 | 0.20 | 1.00 | 0.34 |
| 0.5 | 0.001 | 0.000001 | 0.56 | 0.59 | 0.25 | 0.59 | 0.35 |

**EXPERIMENT 5.4**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.78 0.58 0.67 67

Clase 1 0.18 0.35 0.24 17

accuracy 0.54 84

macro avg 0.48 0.47 0.45 84

weighted avg 0.66 0.54 0.58 84

Test set AUC Score after fine-tuning: 0.4995610184372256

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 111ms/step

Precision (Test Set, Class 1): 0.17647058823529413

Recall (Test Set, Class 1): 0.35294117647058826

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9 | 0.001 | 0.000001 | 0.25 | 0.51 | 0.21 | 1.00 | 0.35 |
| 0.5 | 0.001 | 0.000001 | 0.54 | 0.50 | 0.18 | 0.35 | 0.24 |

**EXPERIMENT 5.5**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.79 0.34 0.48 67

Clase 1 0.20 0.65 0.31 17

accuracy 0.40 84

macro avg 0.50 0.50 0.39 84

weighted avg 0.67 0.40 0.44 84

Test set AUC Score after fine-tuning: 0.5171202809482002

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 214ms/step

Precision (Test Set, Class 1): 0.2

Recall (Test Set, Class 1): 0.6470588235294118

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.2 | 0.001 | 0.000001 | 0.33 | 0.56 | 0.23 | 1.00 | 0.38 |
| 0.5 | 0.001 | 0.000001 | 0.40 | 0.52 | 0.20 | 0.65 | 0.31 |

**EXPERIMENT 6**

3/3 ━━━━━━━━━━━━━━━━━━━━ 16s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.82 0.91 0.87 67

Clase 1 0.40 0.24 0.30 17

accuracy 0.77 84

macro avg 0.61 0.57 0.58 84

weighted avg 0.74 0.77 0.75 84

Test set AUC Score after fine-tuning: 0.5381913959613697

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 113ms/step

Precision (Test Set, Class 1): 0.4

Recall (Test Set, Class 1): 0.23529411764705882

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.4 | 0.0001 | 0.0000001 | 0.63 | 0.69 | 0.33 | 0.76 | 0.46 |
| 0.5 | 0.0001 | 0.0000001 | 0.77 | 0.54 | 0.4 | 0.24 | 0.30 |

**EXPERIMENT 7**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.80 0.18 0.29 67

Clase 1 0.20 0.82 0.33 17

accuracy 0.31 84

macro avg 0.50 0.50 0.31 84

weighted avg 0.68 0.31 0.30 84

Test set AUC Score after fine-tuning: 0.6549604916593503

3/3 ━━━━━━━━━━━━━━━━━━━━ 1s 153ms/step

Precision (Test Set, Class 1): 0.2028985507246377

Recall (Test Set, Class 1): 0.8235294117647058

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.5 | 0.001 | 0.000001 | 0.55 | 0.58 | 0.28 | 0.76 | 0.41 |
| 0.5 | 0.001 | 0.000001 | 0.31 | 0.65 | 0.20 | 0.82 | 0.33 |

**EXPERIMENT 8**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.82 0.91 0.87 67

Clase 1 0.40 0.24 0.30 17

accuracy 0.77 84

macro avg 0.61 0.57 0.58 84

weighted avg 0.74 0.77 0.75 84

Test set AUC Score after fine-tuning: 0.47497805092186135

/3 ━━━━━━━━━━━━━━━━━━━━ 1s 150ms/step

Precision (Test Set, Class 1): 0.4

Recall (Test Set, Class 1): 0.23529411764705882

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.0001 | 0.00000001 | 0.20 | 0.42 | 0.20 | 1.00 | 0.34 |
| 0.5 | 0.0001 | 0.00000001 | 0.77 | 0.48 | 0.4 | 0.24 | 0.30 |

**EXPERIMENT 9**

3/3 ━━━━━━━━━━━━━━━━━━━━ 14s 3s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.80 1.00 0.89 67

Clase 1 0.00 0.00 0.00 17

accuracy 0.80 84

macro avg 0.40 0.50 0.44 84

weighted avg 0.64 0.80 0.71 84

Test set AUC Score after fine-tuning: 0.5399473222124671

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 84ms/step

Precision (Test Set, Class 1): 0.0

Recall (Test Set, Class 1): 0.0

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.1 | 0.00001 | 0.0001 | 0.79 | 0.35 | 0.33 | 0.06 | 0.10 |
| 0.5 | 0.00001 | 0.0001 | 0.80 | 0.54 | 0.0 | 0.0 | 0.0 |

**EXPERIMENT 10**

3/3 ━━━━━━━━━━━━━━━━━━━━ 15s 4s/step

Test set classification report after fine-tuning:

precision recall f1-score support

Clase 0 0.88 0.45 0.59 67

Clase 1 0.26 0.76 0.39 17

accuracy 0.51 84

macro avg 0.57 0.61 0.49 84

weighted avg 0.76 0.51 0.55 84

Test set AUC Score after fine-tuning: 0.5838454784899033

3/3 ━━━━━━━━━━━━━━━━━━━━ 0s 76ms/step

Precision (Test Set, Class 1): 0.26

Recall (Test Set, Class 1): 0.7647058823529411

| **Threshold** | **LR WU** | **LR FT** | **Test Accuracy** | **Test AUC Score** | **Test Precision Class 1** | **Test Recall Class 1** | **F1 Score**  **Class 1** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0.7 | 0.001 | 0.000001 | 0.73 | 0.65 | 0.36 | 0.47 | 0.41 |
| 0.5 | 0.001 | 0.000001 | 0.51 | 0.58 | 0.26 | 0.76 | 0.39 |

**PAPILA RESULTS**

| **Model** | **Multiclass AUC (Mean)** | **Binary AUC (Range)** | **Optic Disc Dice Coefficient** | **Optic Cup Dice Coefficient** | **p-value (CDR Variability)** |
| --- | --- | --- | --- | --- | --- |
| DenseNet121 | 0.67 | 0.64-0.75 | 0.935 | 0.82 | >0.2 |
| Inception | 0.66 | 0.64-0.72 | 0.935 | 0.82 | >0.2 |

**Number of Samples per Class in Train and Test Sets:**

| **Class** | **Samples(Train)** | **Samples(Test)** |
| --- | --- | --- |
| Class 0 | 265 | 67 |
| Class 1 | 70 | 17 |