

0 - mix over(15k) and under sampling(60k) - custom (2 cov / pool + 128 + batchnorm + dropout(0.1) + 128 + batchnorm + dropout(0.1)

Metrics for Train Data:

Accuracy: 0.7282

Precision: 0.2041533897373915

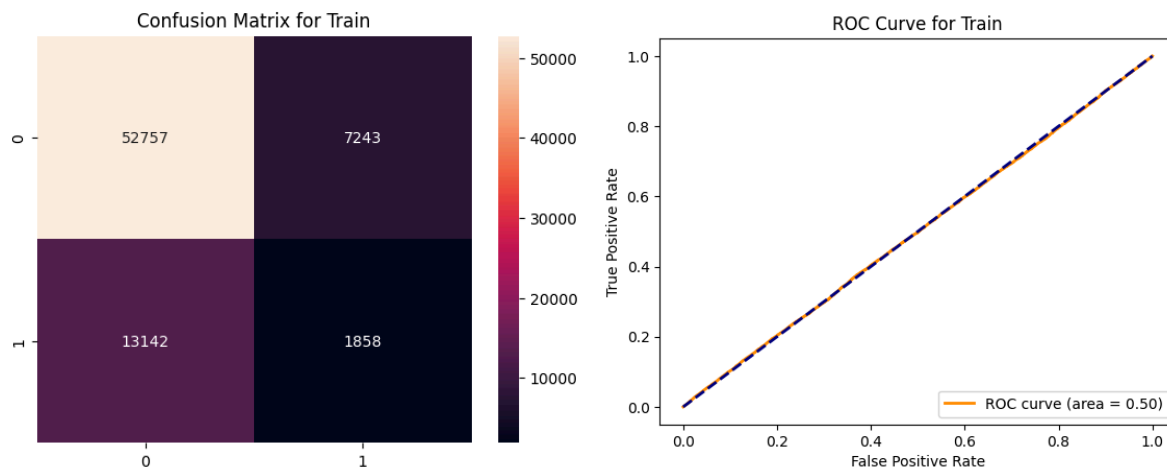
Recall: 0.12386666666666667

F1-Score: 0.15418447367329158

AUC: 0.49963454166666665

Threshold at Specificity 95.00%: 0.9906

Sensitivity at Specificity 95.00%: 0.0535



Metrics for Validation Data:

Accuracy: 0.9634840871021776

Precision: 0.22535211267605634

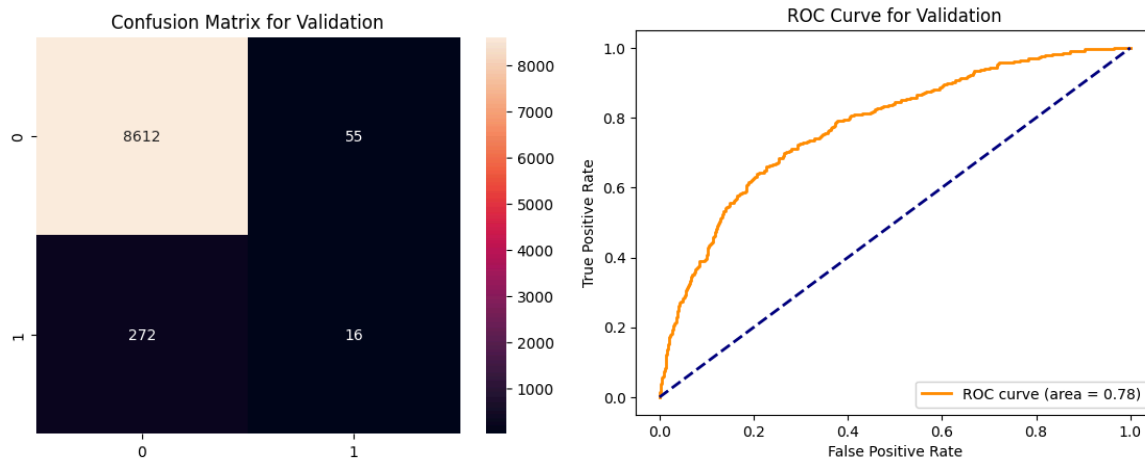
Recall: 0.05555555555555555

F1-Score: 0.08913649025069638

AUC: 0.7772405388254298

Threshold at Specificity 95.00%: 0.0100

Sensitivity at Specificity 95.00%: 0.2812



Metrics for Test Data:

Accuracy: 0.9644221105527638

Precision: 0.2638888888888889

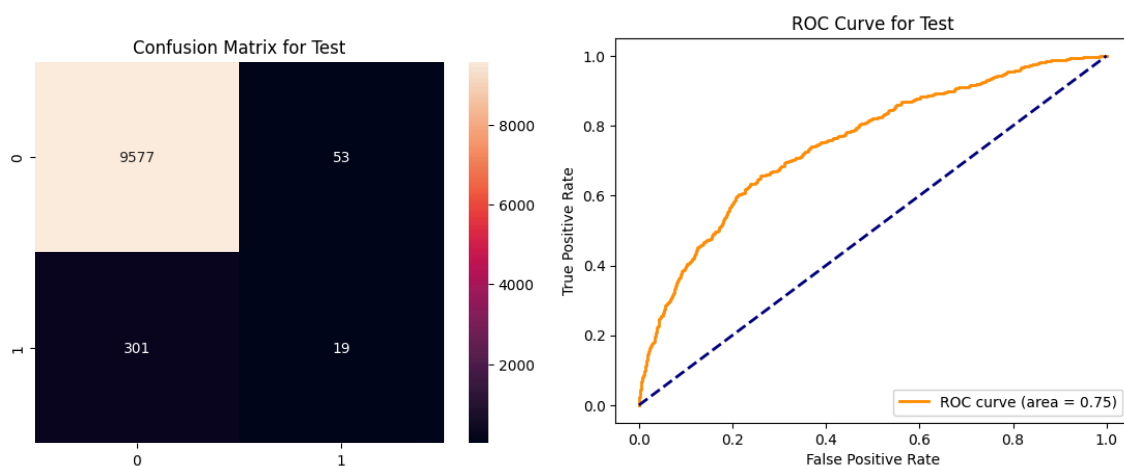
Recall: 0.059375

F1-Score: 0.09693877551020408

AUC: 0.7512470794392524

Threshold at Specificity 95.00%: 0.0092

Sensitivity at Specificity 95.00%: 0.2562



## 1 - full oversampling(76k+76k) - vgg16 + 128 + 128

Metrics for Validation Data:

Accuracy: 0.9087660524846455

Precision: 0.17224287484510534

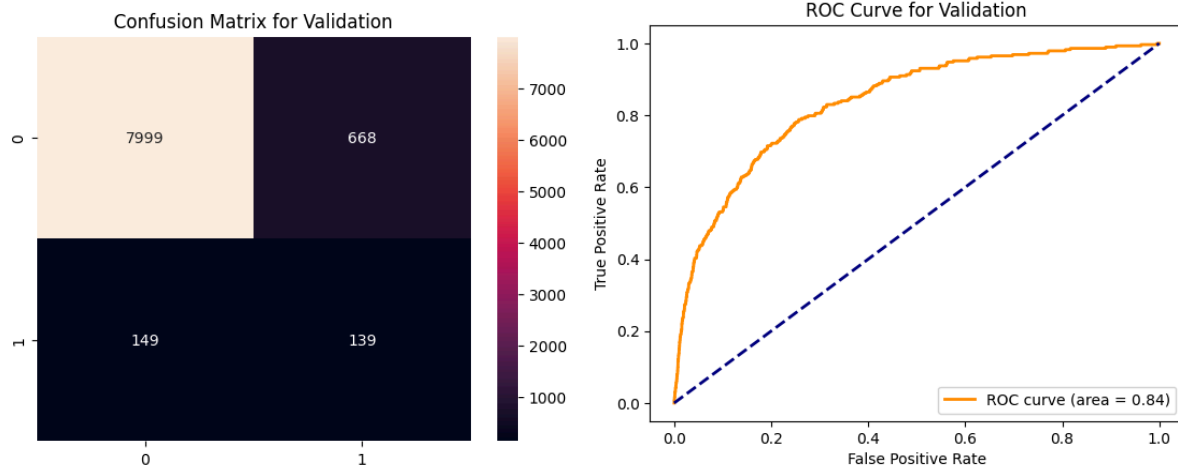
Recall: 0.4826388888888889

F1-Score: 0.25388127853881276

AUC: 0.837484816289117

Threshold at Specificity 95.00%: 0.7823

Sensitivity at Specificity 95.00%: 0.4271



Metrics for Test Data:

Accuracy: 0.9110552763819095

Precision: 0.17861205915813425

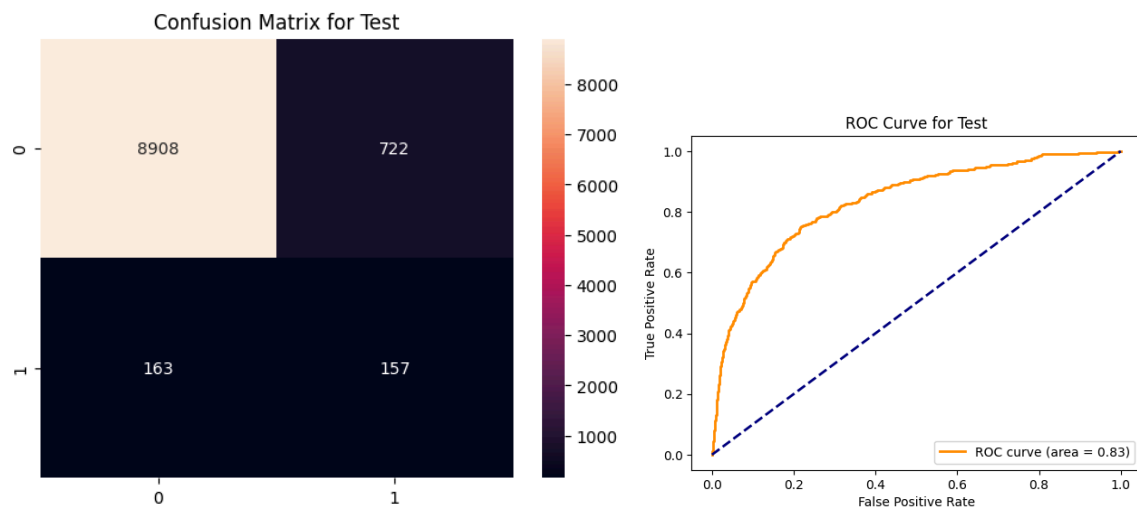
Recall: 0.490625

F1-Score: 0.2618849040867389

AUC: 0.8349042705088265

Threshold at Specificity 95.00%: 0.7797

Sensitivity at Specificity 95.00%: 0.4313



Metrics for Train Data:

Accuracy: 0.49960894929162125

Precision: 0.4996285063519324

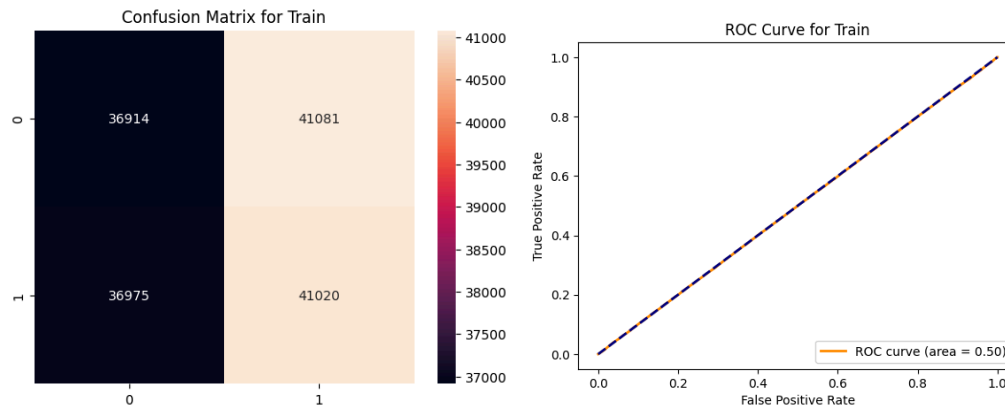
Recall: 0.525931149432656

F1-Score: 0.5124425344793124

AUC: 0.4994541432849127

Threshold at Specificity 95.00%: 0.9990

Sensitivity at Specificity 95.00%: 0.0497



## 2 - mix over(15k) and under sampling(60k) - custom ((2 cov / pool + 256)

Metrics for Validation Data:

Accuracy: 0.6702

Precision: 0.19795221843003413

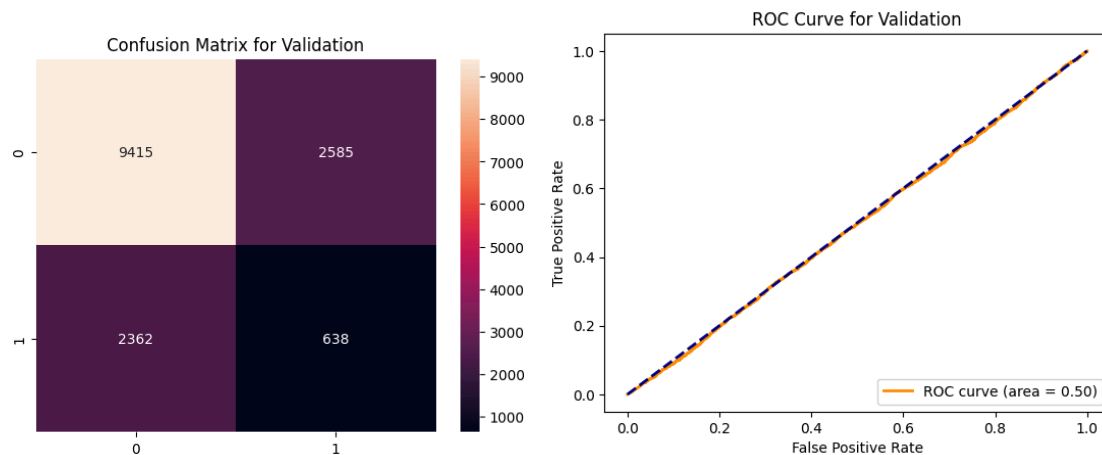
Recall: 0.21266666666666667

F1-Score: 0.20504579784669774

AUC: 0.49539818055555556

Threshold at Specificity 95.00%: 0.9999

Sensitivity at Specificity 95.00%: 0.0463



Metrics

for Test Data:

Accuracy: 0.6724

Precision: 0.20186915887850468

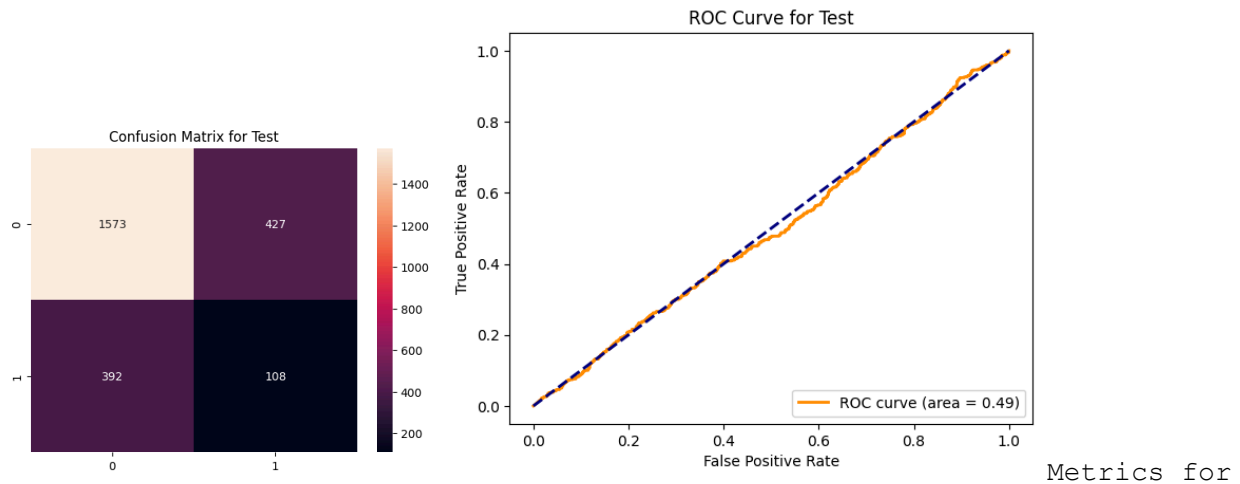
Recall: 0.216

F1-Score: 0.20869565217391303

AUC: 0.49381650000000005

Threshold at Specificity 95.00%: 0.9999

Sensitivity at Specificity 95.00%: 0.0460



Train Data:

Accuracy: 0.6719

Precision: 0.20004683109584764

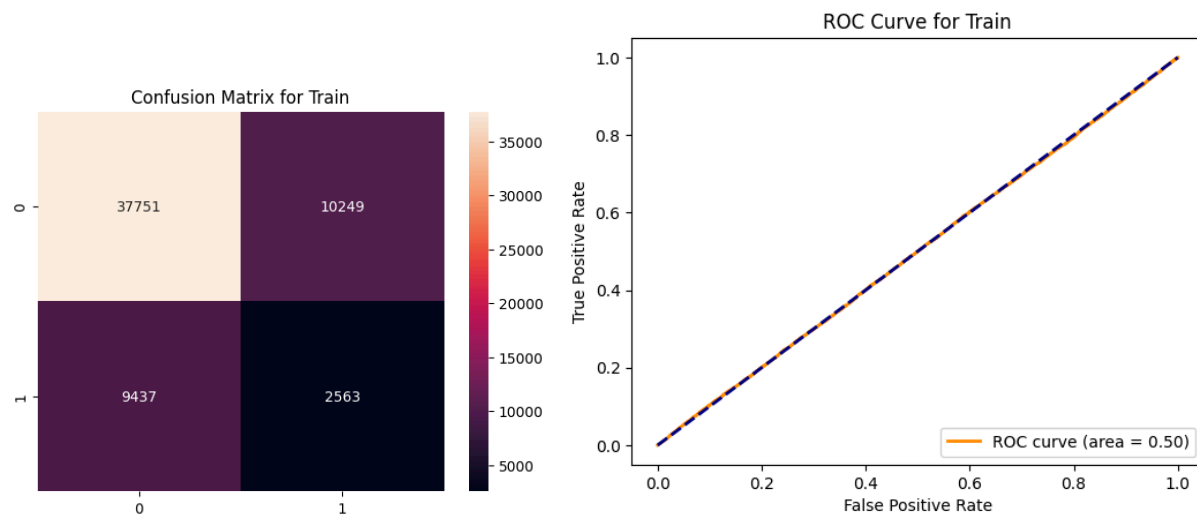
Recall: 0.21358333333333332

F1-Score: 0.2065935837497985

AUC: 0.49934017361111116

Threshold at Specificity 95.00%: 0.9999

Sensitivity at Specificity 95.00%: 0.0531



**3 - mix over(10k) and under sampling(10k) - vgg16 + 128 + dropout(0.1) + 128 + dropout(0.1)**

Metrics for Validation Data:

Accuracy: 0.7984617099542972

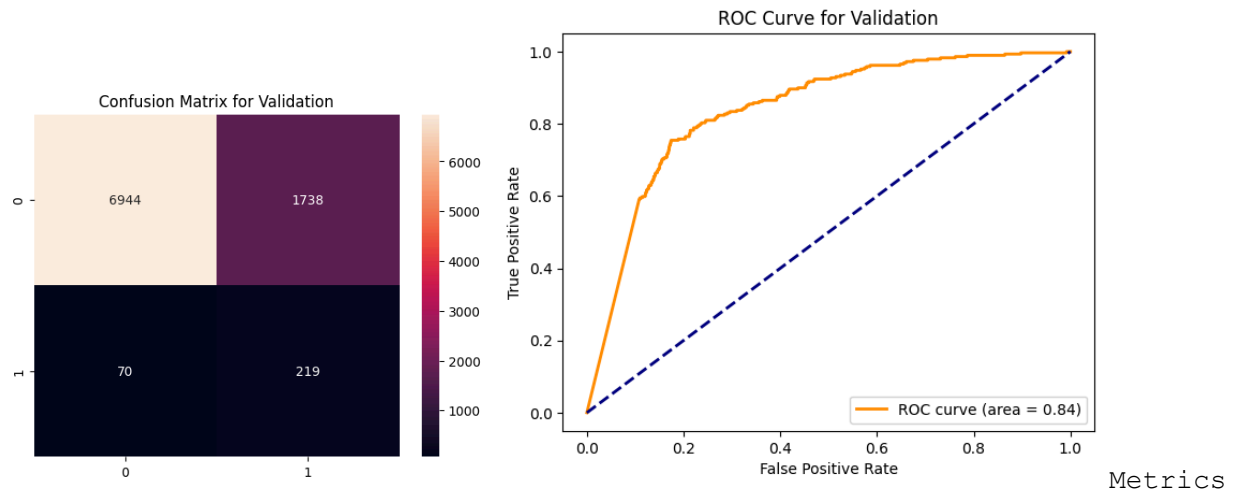
Precision: 0.11190597853857946

Recall: 0.7577854671280276

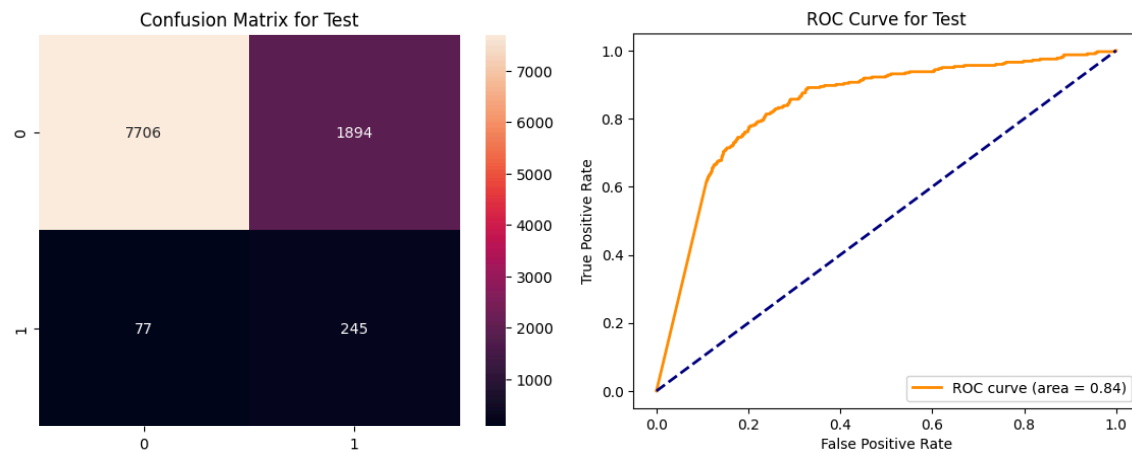
F1-Score: 0.195013357079252

AUC: 0.839571431645954

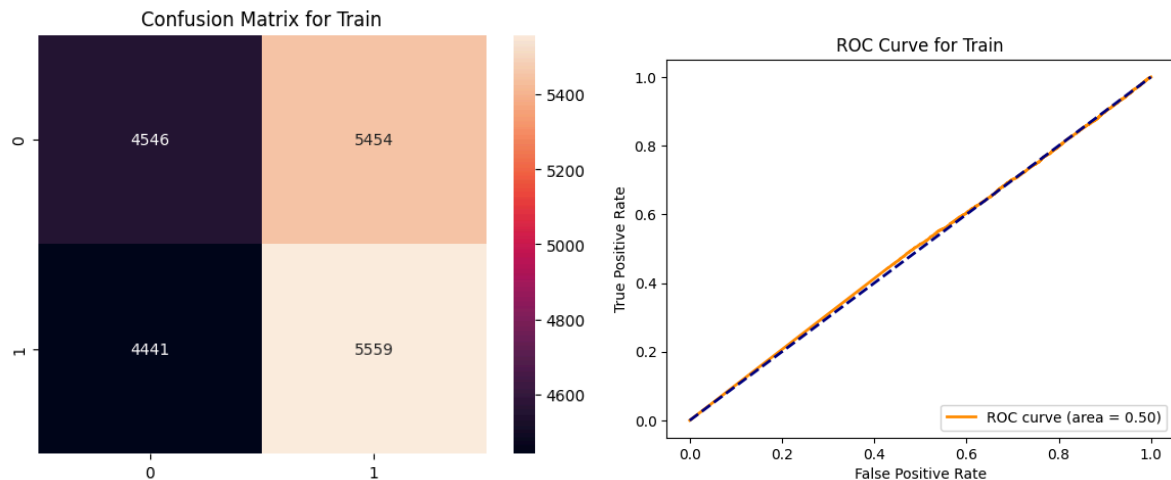
Threshold at Specificity 95.00%: 0.8332  
Sensitivity at Specificity 95.00%: 0.5917



for Test Data:  
Accuracy: 0.8013505341664987  
Precision: 0.11453950444132772  
Recall: 0.7608695652173914  
F1-Score: 0.19910605444941082  
AUC: 0.8408899456521739  
Threshold at Specificity 95.00%: 0.8332  
Sensitivity at Specificity 95.00%: 0.6149



Metrics for Train Data:  
Accuracy: 0.50525  
Precision: 0.5047670934350313  
Recall: 0.5559  
F1-Score: 0.5291010326940465  
AUC: 0.504520375  
`evaluate_model(model, train_generator, 'Train')`



**4 - 2 - mix over(15k) and under sampling(60k) - vgg16 + 128 + dropout(0.1) + 128 + dropout(0.1)**

Metrics for Validation Data:

Accuracy: 0.9656671497046038

Precision: 0.4558139534883721

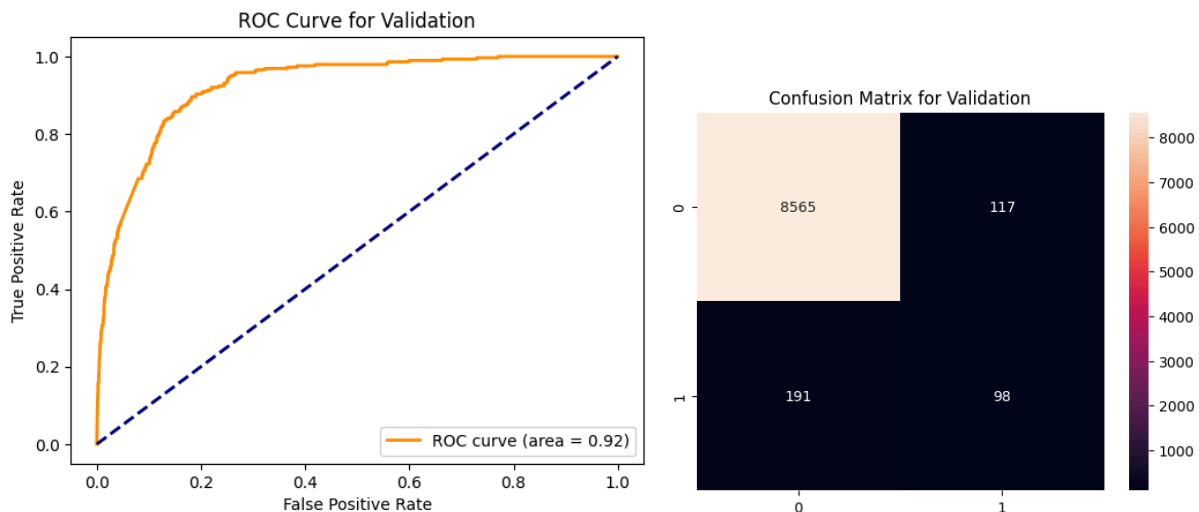
Recall: 0.3391003460207612

F1-Score: 0.3888888888888889

AUC: 0.9240246893505156

Threshold at Specificity 95.00%: 0.2718

Sensitivity at Specificity 95.00%: 0.6851



Metrics for Test Data:

Accuracy: 0.9666397903648458

Precision: 0.4817813765182186

Recall: 0.3695652173913043

F1-Score: 0.4182776801405975

AUC: 0.9199577833850932

Threshold at Specificity 95.00%: 0.2718  
Sensitivity at Specificity 95.00%: 0.7205

