XceptionNet implementation

- Architecture as in F. Chollet, "Xception: Deep Learning with Depthwise Separable Convolutions,"

- Training parameters:

  - Starting lr: **0.0001**

  - Batch size: **32**

  - Epochs: **30**
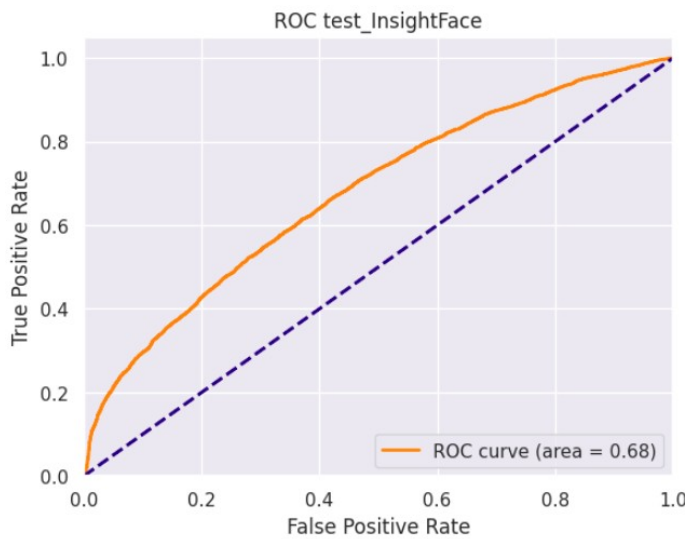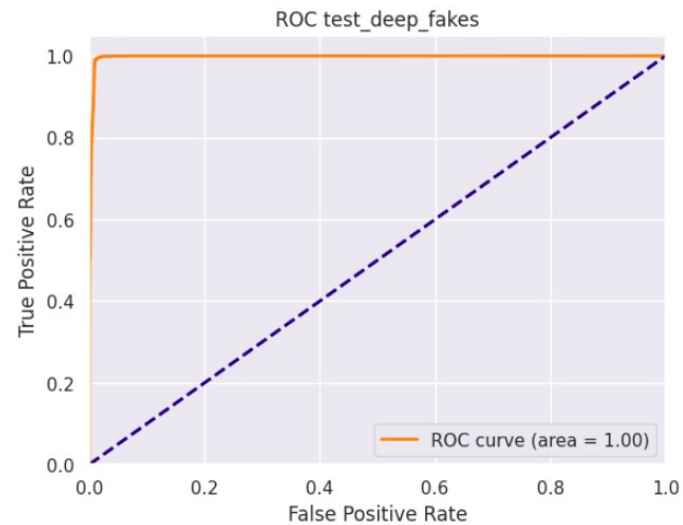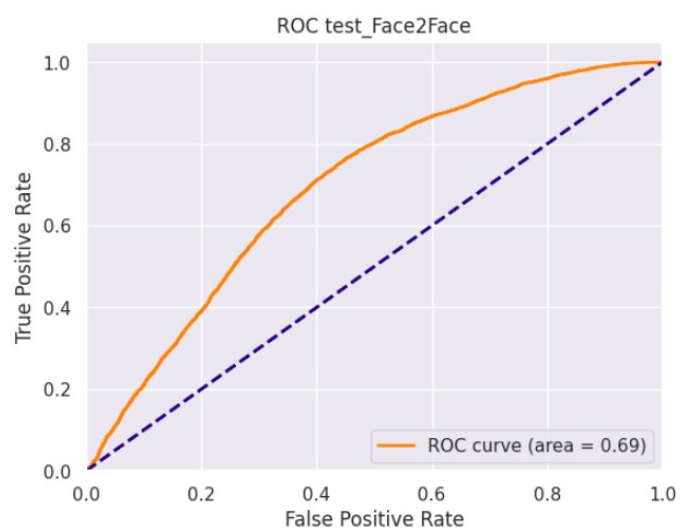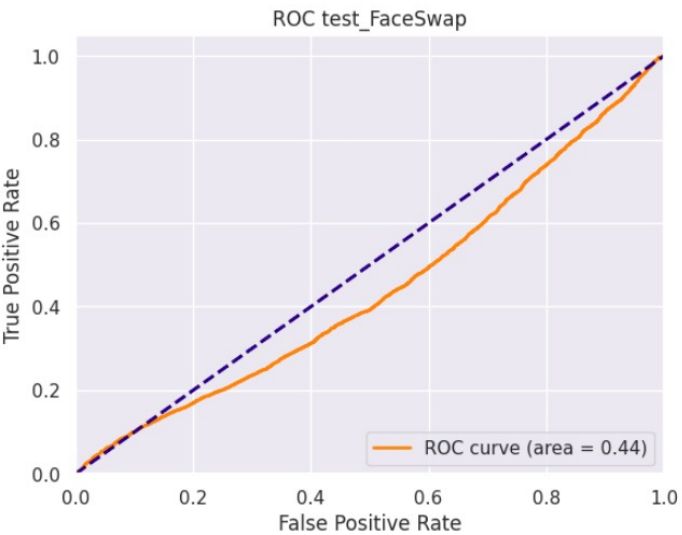
  - Loss function: **Cross Entropy Loss**

  - Optimizer: **AdamW (default values for the moments)**

  - Step Lr schedule: **γ=0.94, step_size=2**

  - He Weight initialization

- Train dataset: **DeepFake**
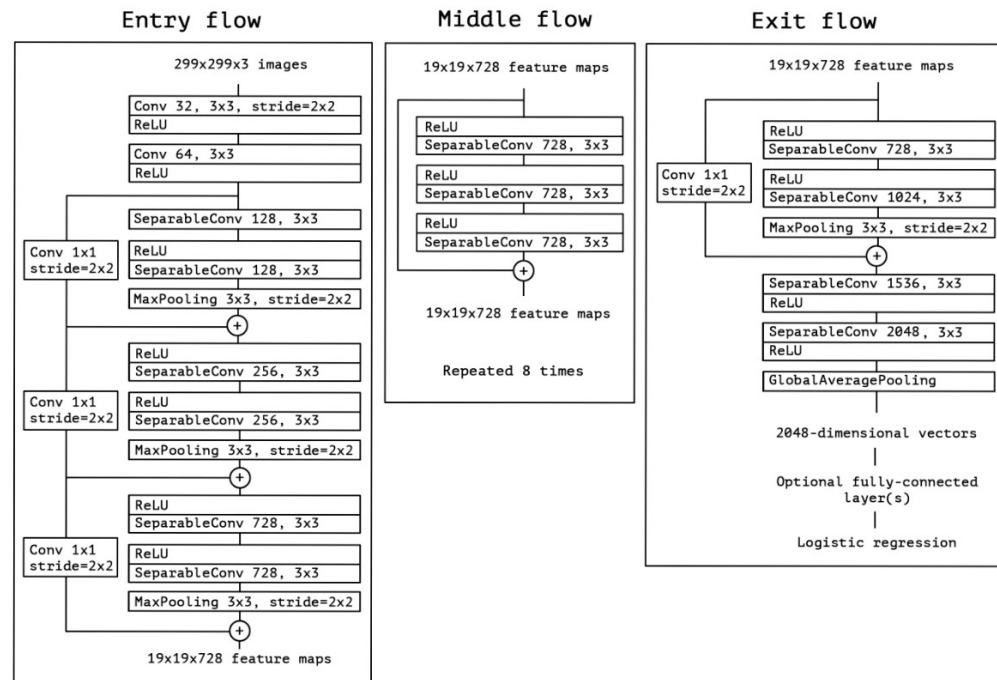
Results

Method	AUC	AC	Loss
FaceSwap	0.4427	0.5522	7.5868
Face2Face	0.6946	0.5264	5.8658
DeepFake	**0.9977**	**0.9894**	**0.0672**
InsightFace	0.6767	0.5057	6.2374
NeuralTextures	0.7576	0.6162	4.3786
FaceShifter	0.5866	0.5041	7.0382
All	0.6978	0.3289	9.0836

| ROC test_FaceSwap | ROC test_Face2Face | ROC test_deep_fakes |
| ROC curve (area = 0.44) | ROC curve (area = 0.69) | ROC curve (area = 1.00) |

| ROC test_InsightFace | ROC test_NeuralTextures | ROC all |
| ROC curve (area = 0.68) | ROC curve (area = 0.76) | ROC curve (area = 0.70) |
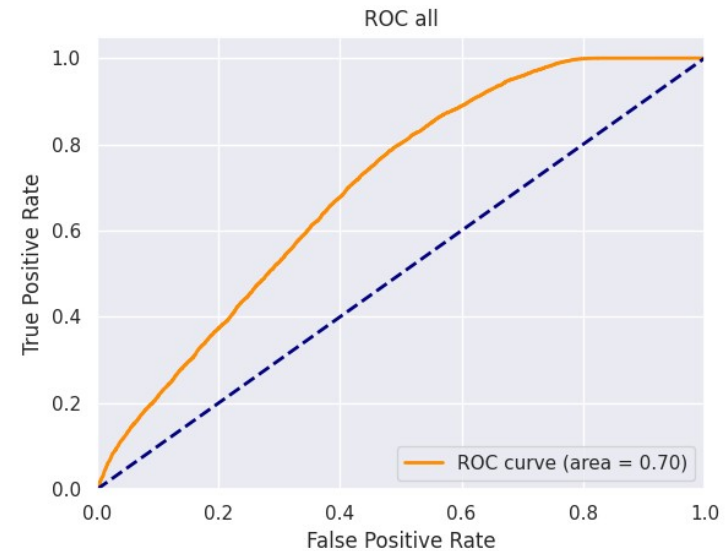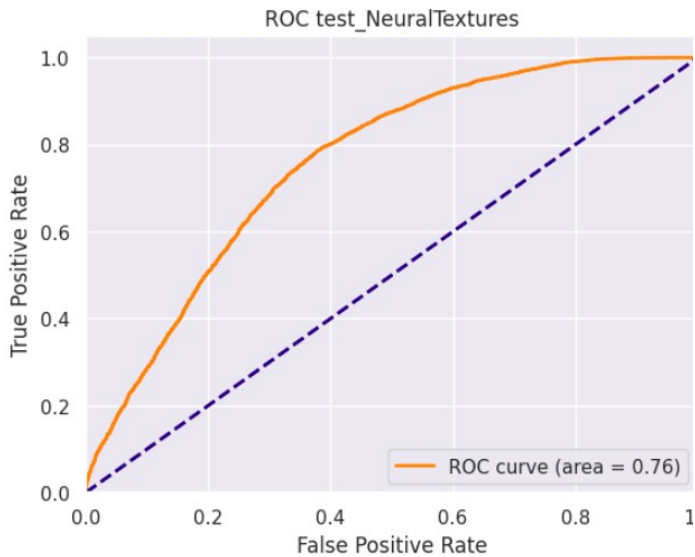
To try

- Tried learning schedule: Reduce LR on Plateau (purple)

- Training with more epochs

- Different learning rates (0.0002)

- Results uncertainty estimation?

Val_Loss
— lr_0.0001_epochs_30_batch_size_32_platoLRS — lr_0.0001_epochs_30_batch_size_32