

Supplementary Figures

Section 1: Exploratory Data Analysis (EDA)

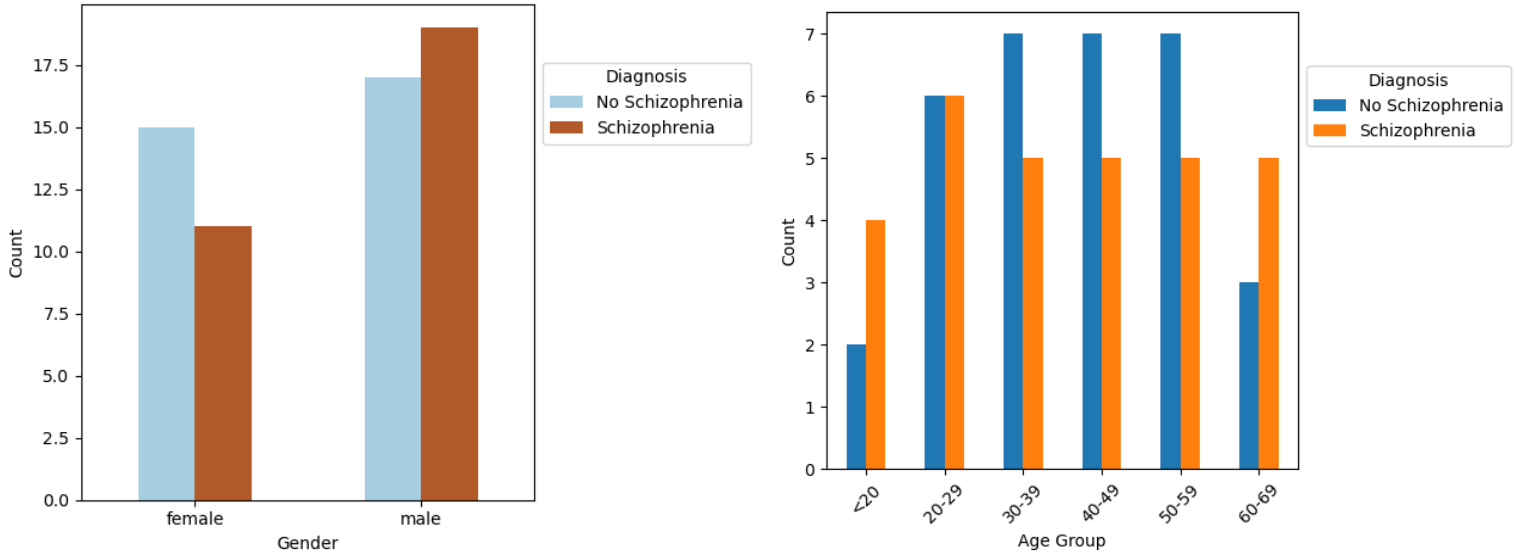


Figure 1: Gender distribution of schizophrenic and non-schizophrenic patients

Figure 2: Age distribution of schizophrenic and non-schizophrenic patients

Section 2: Confusion Matrices and ROC Curves for Preprocessing Experiments

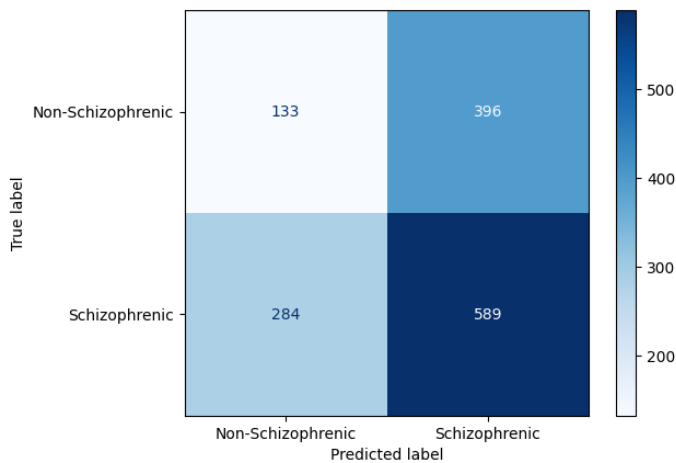


Figure 3: Confusion matrix from first experiment-model training on raw images

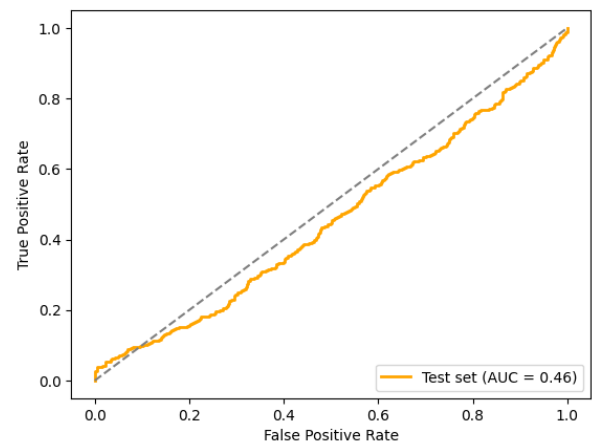


Figure 4: ROC Curve from first experiment: model training on raw images

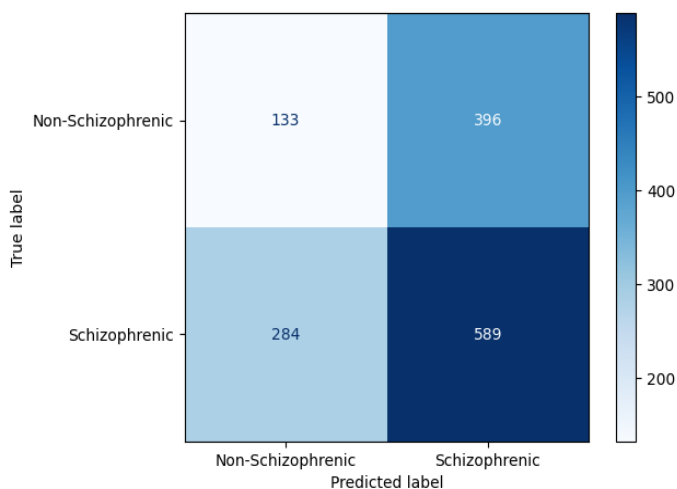


Figure 5: Confusion matrix from second experiment- resampling images

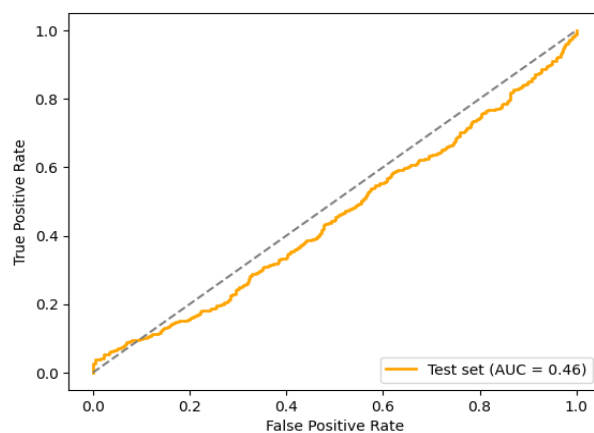


Figure 6: ROC Curve from second experiment- model training on raw images

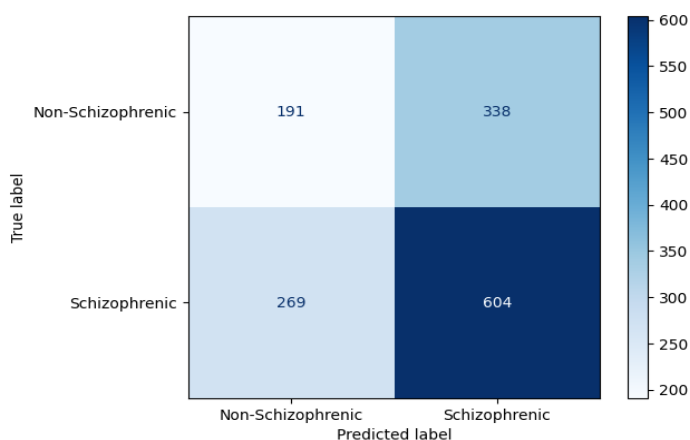


Figure 7: Confusion matrix from third experiment- normalizing images

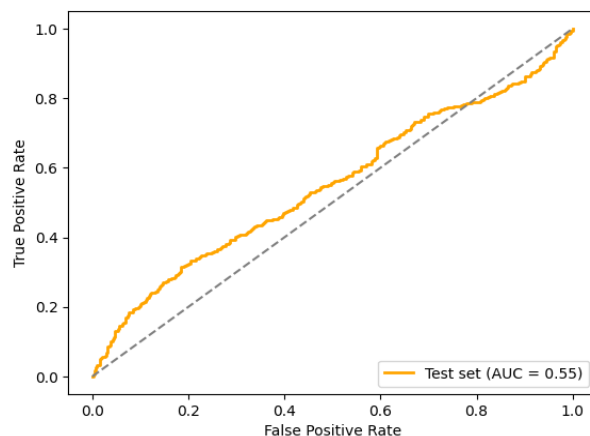


Figure 8: ROC Curve from third experiment- normalizing images

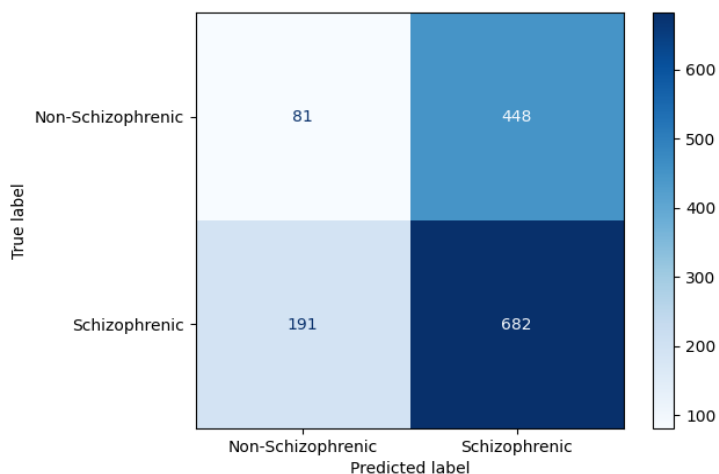


Figure 9: Confusion matrix from forth experiment- brain extraction

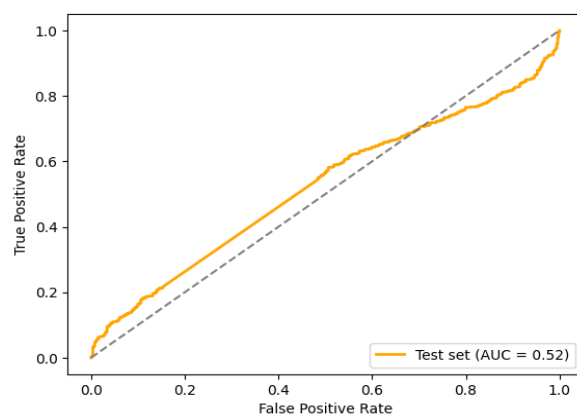


Figure 10: ROC Curve from forth experiment- brain extraction

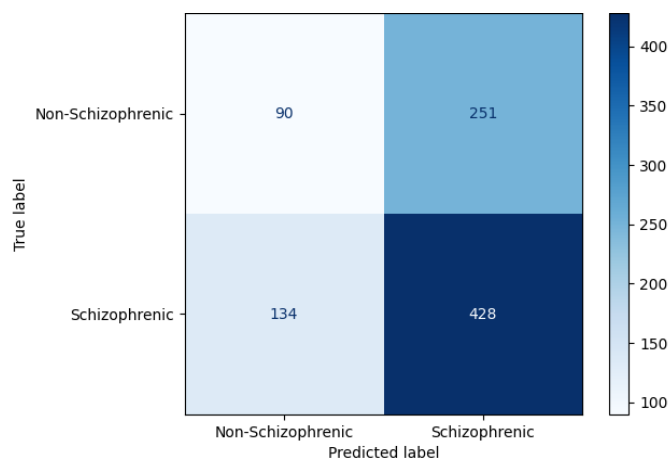


Figure 11: Confusion matrix from fifth experiment-cropping

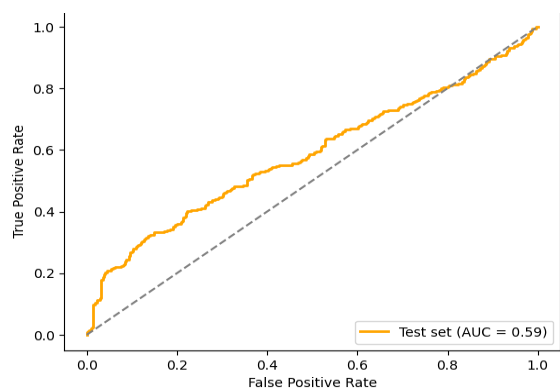


Figure 12: ROC Curve from fifth experiment-cropping

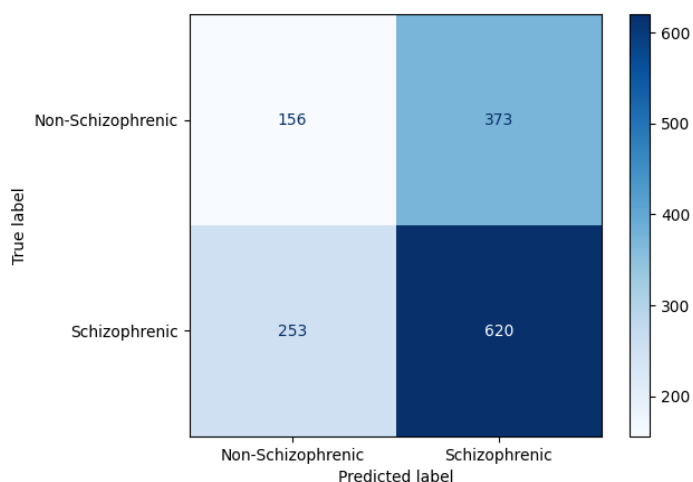


Figure 13: Confusion matrix from sixth experiment-smoothing

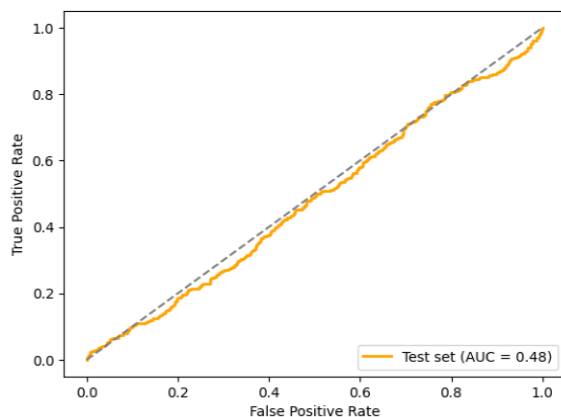


Figure 14: ROC Curve from sixth experiment-smoothing

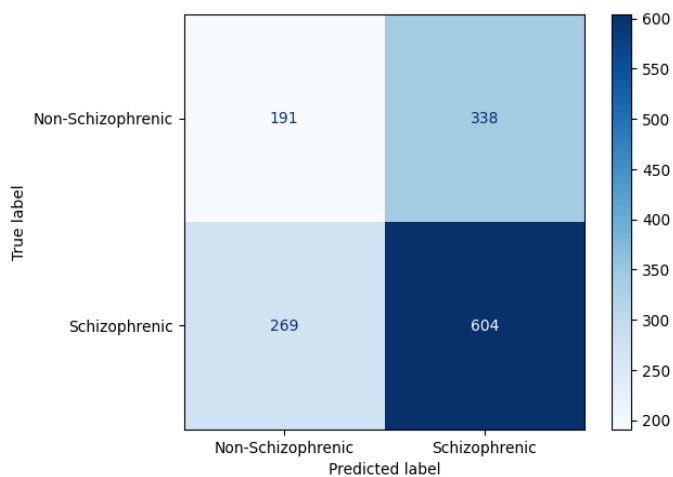


Figure 15: Confusion matrix from seventh experiment-resampling + normalization

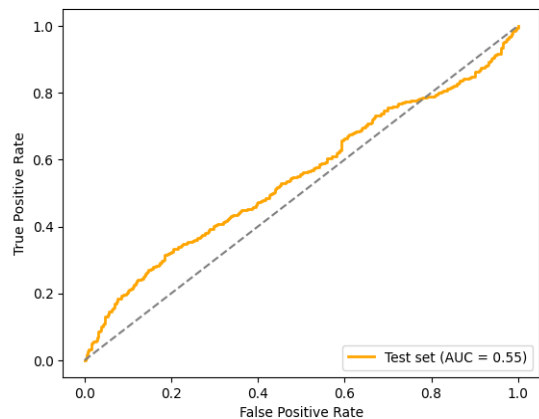


Figure 16: ROC Curve from seventh experiment-resampling + normalization

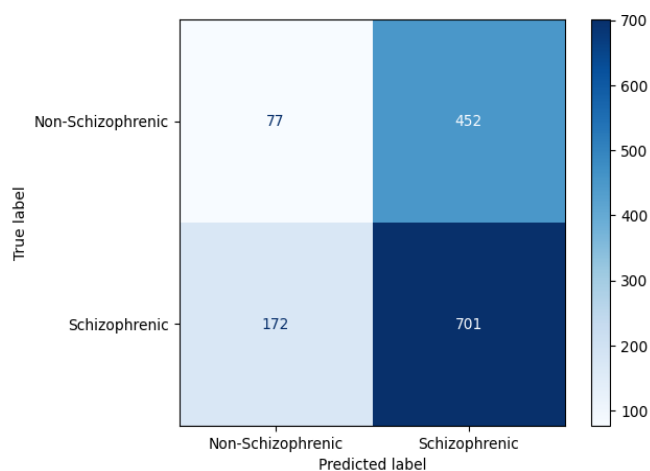


Figure 17: Confusion matrix from eighth experiment-
resampling + normalization + brain extraction

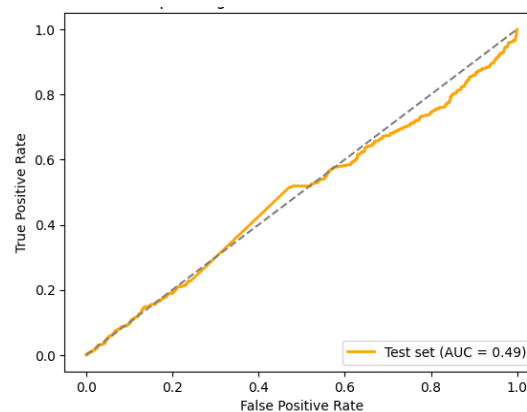


Figure 18: ROC Curve from eighth experiment-
resampling + normalization + brain extraction

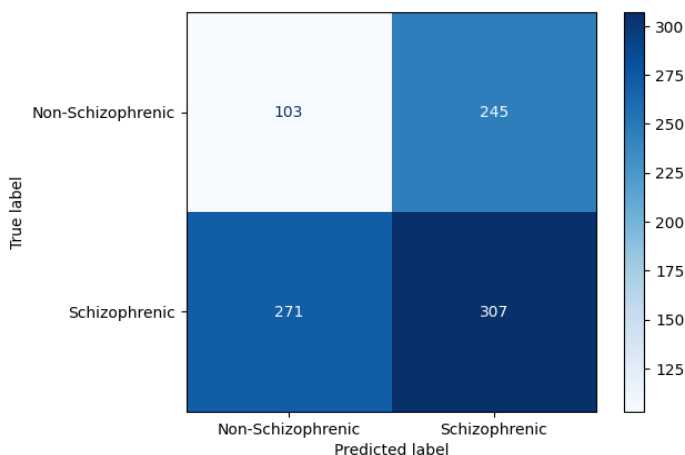


Figure 19: Confusion matrix from ninth experiment-
resampling + normalization + brain extraction + cropping

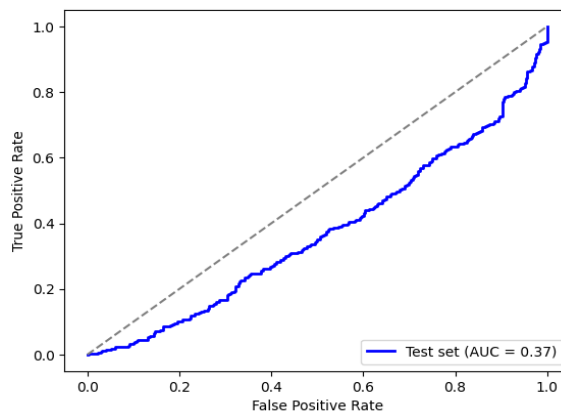


Figure 20: ROC Curve from ninth experiment- resampling +
normalization + brain extraction + cropping

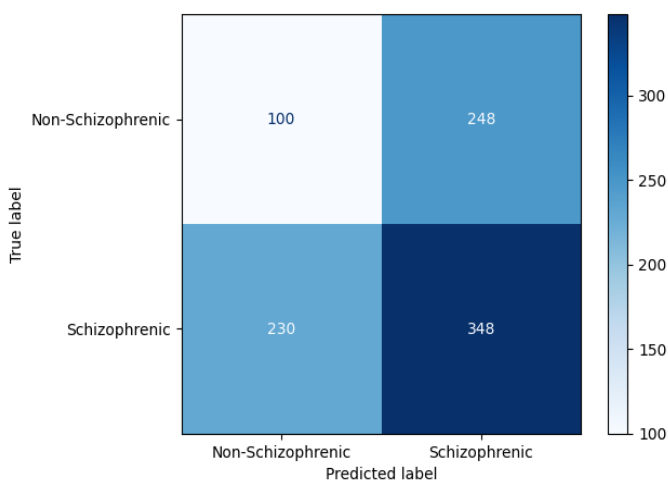


Figure 21: Confusion matrix from tenth experiment-
resampling + normalization + brain extraction +
cropping + smoothing

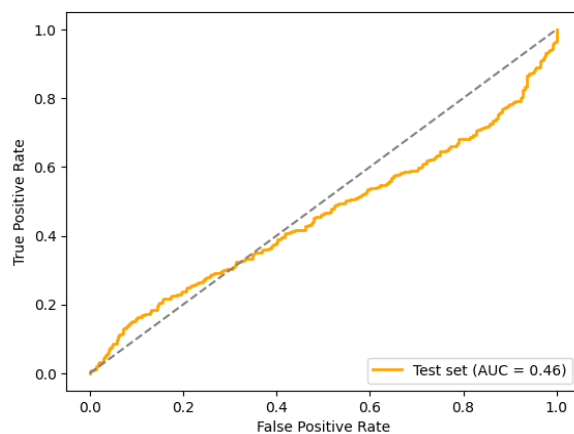


Figure 22: Confusion matrix from tenth experiment-
resampling + normalization + brain extraction + cropping +
smoothing

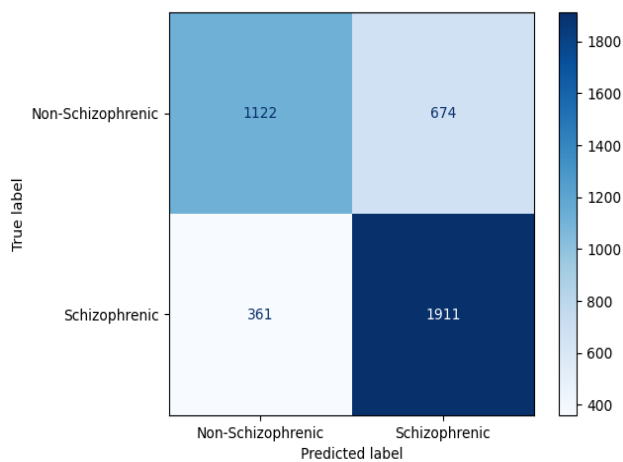


Figure 23: Confusion matrix from eleventh experiment-translation

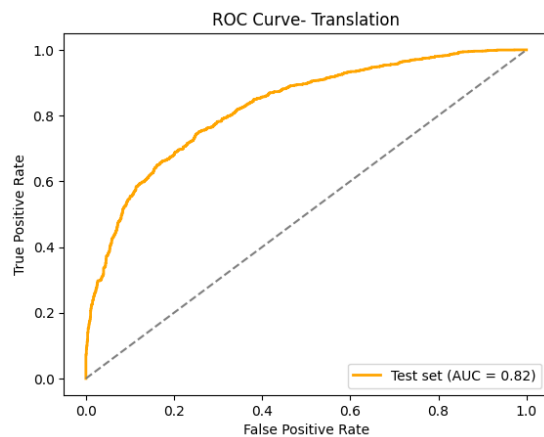


Figure 24: ROC Curve from eleventh experiment-translation

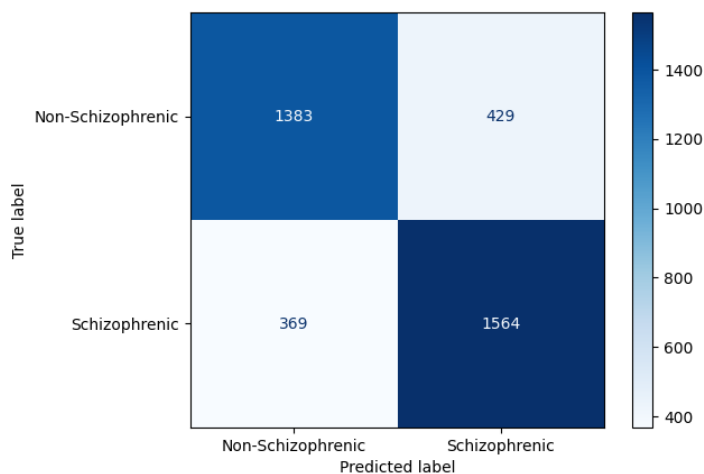


Figure 25: Confusion matrix from twelfth experiment-Rotation

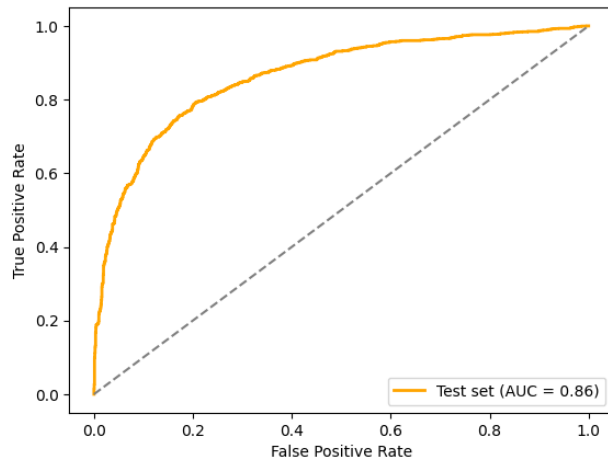


Figure 26: Confusion matrix from twelfth experiment-Rotation

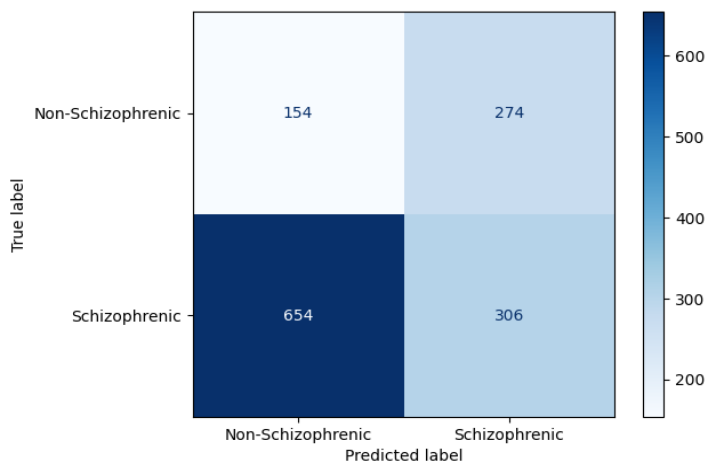


Figure 27: Confusion matrix from thirteenth experiment-Gaussian noise

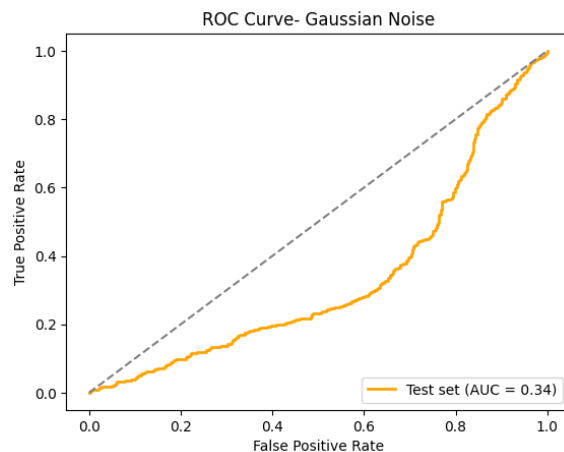


Figure 28: Confusion matrix from thirteenth experiment-Gaussian noise

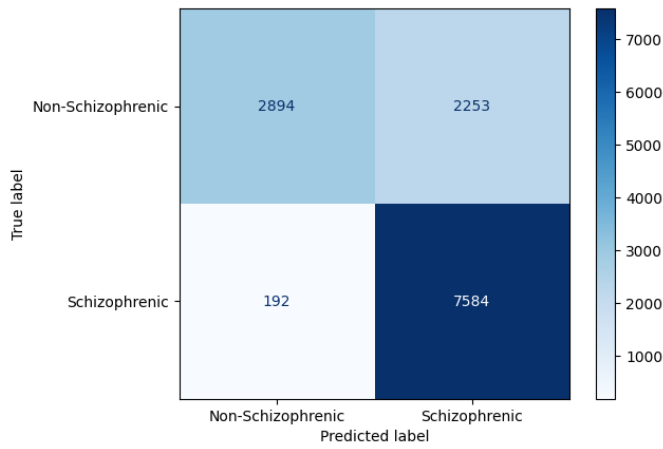


Figure 29: Confusion matrix from final training- Resampling + Normalization + Brain Extraction + Translation + Rotation

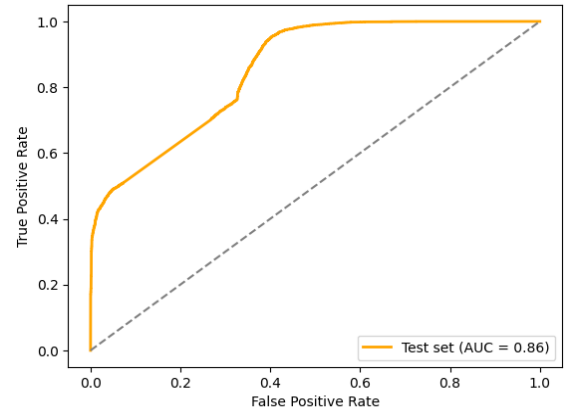


Figure 30: ROC CURVE from final training- Resampling + Normalization + Brain Extraction + Translation + Rotation

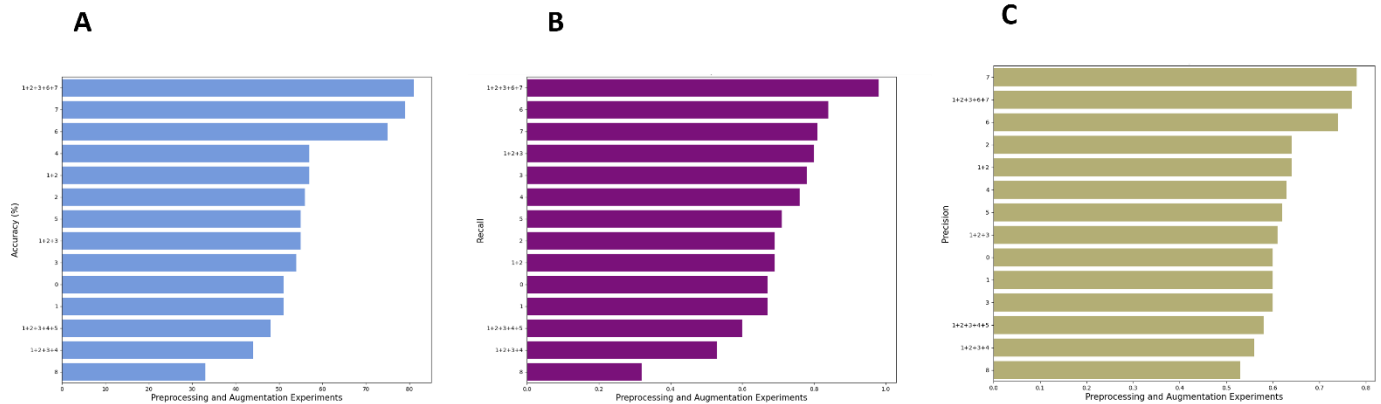


Figure 31: Comparison of metrics across training experiments.

Summary of the metrics for each preprocessing experiment (see Tables 3 and 4). (A) Comparison of accuracies across experiments. The highest accuracy is recorded in the final training combining resampling, normalization, brain extraction, translation, and rotation. (B) Comparison of recall scores. The final training also produces the highest recall score. (C) Comparison of precision scores. The rotation experiment produced the highest score, probably due to an increase in instances of the negative class after augmentation. The numbers represent preprocessing and augmentation techniques: 0- raw images, 1- resampling, 2- normalization, 3- brain extraction, 4- cropping, 5- smoothing, 6- translation, 7-rotation, 8- gaussian noise

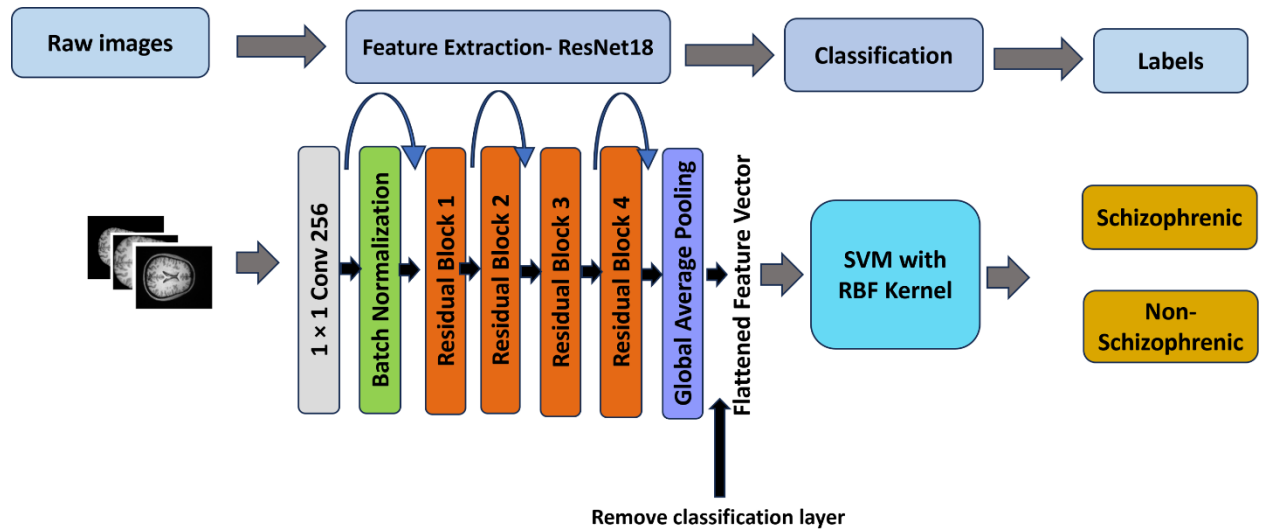


Figure 32: Training workflow and model architecture