Supplementary Figures

Section 1: Exploratory Data Analysis (EDA)

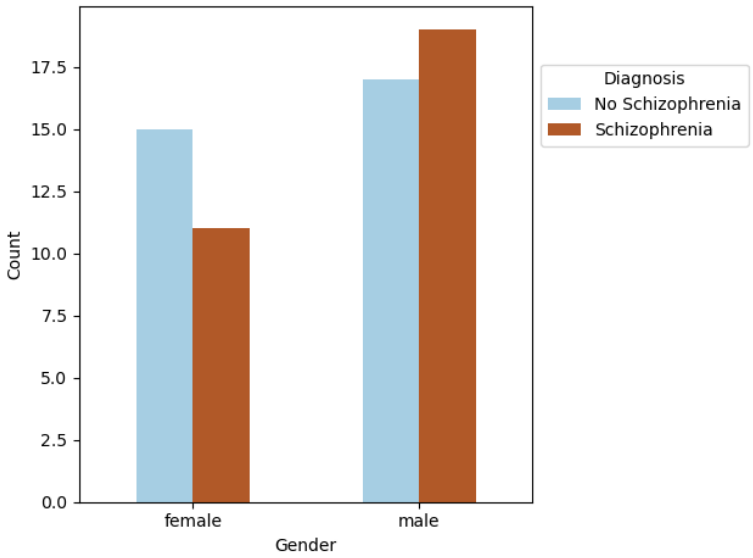

Figure 1: Gender distribution of schizophrenic and non-schizophrenic patients

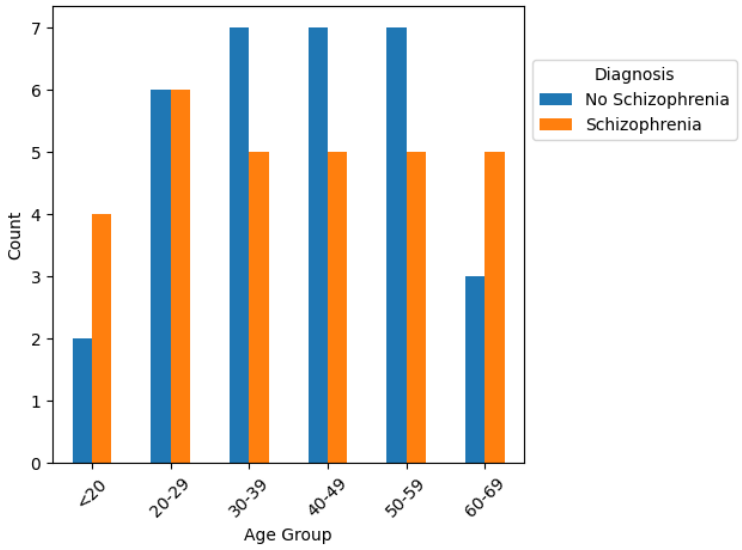

Figure 2: Ager distribution of schizophrenic and non-schizophrenic patients

Section 2: Confusion Matrices and ROC Curves for Preprocessing Experiments

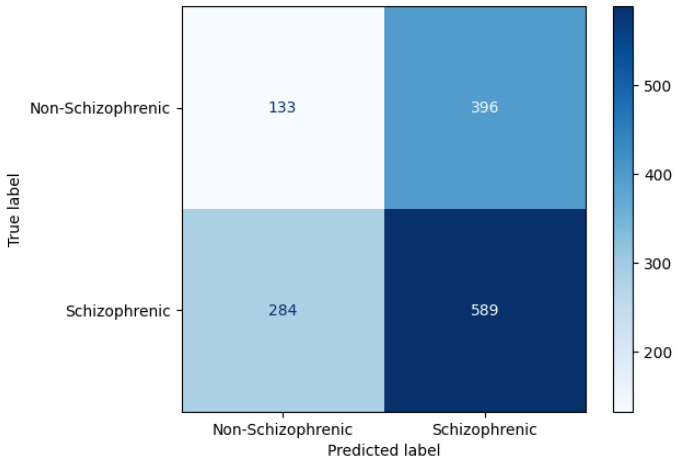

Figure 3: Confusion matrix from first experiment- model training on raw images

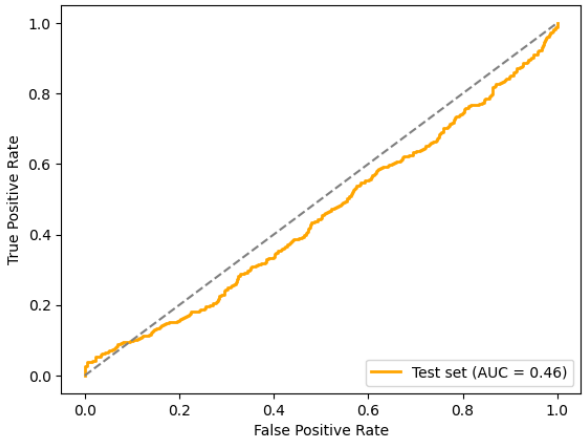

Figure 4: ROC Curve from first experiment: model training on raw images

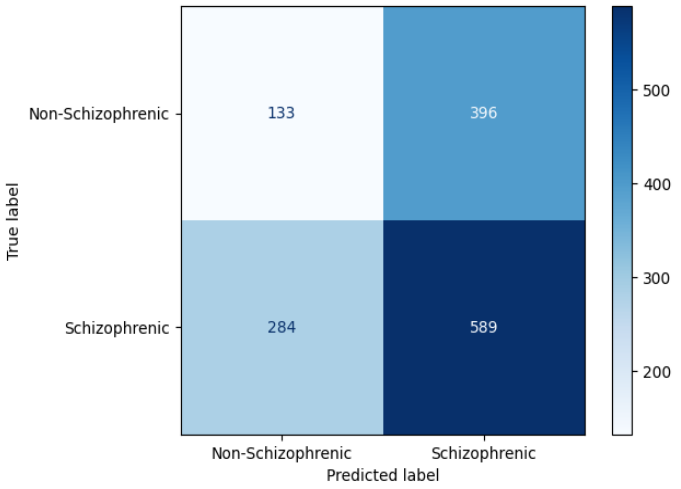

Figure 5: Confusion matrix from second experiment- resampling images

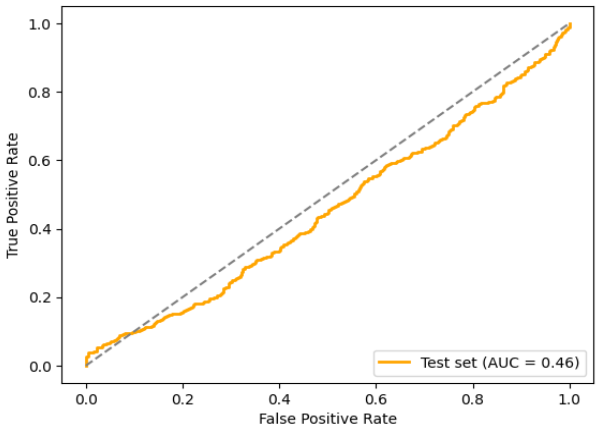

Figure 6: ROC Curve from second experiment- model training on raw images

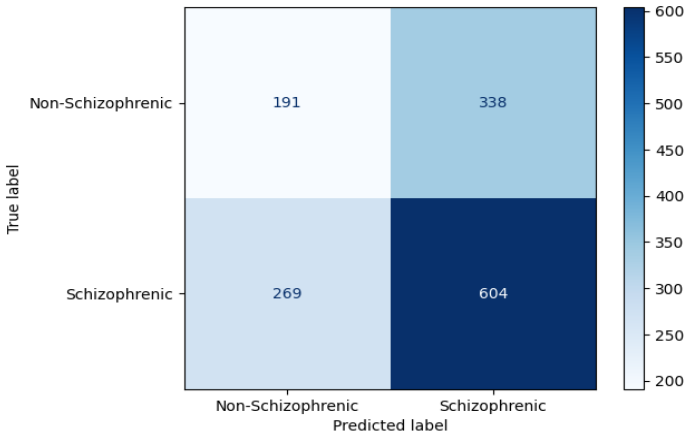

Figure 7: Confusion matrix from third experiment- normalizing images

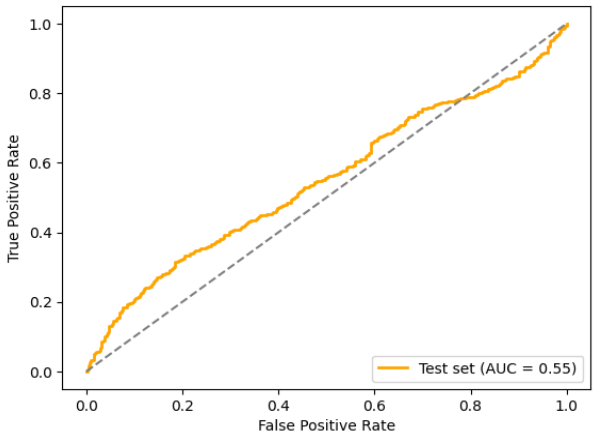

Figure 8: ROC Curve from third experiment- normalizing images

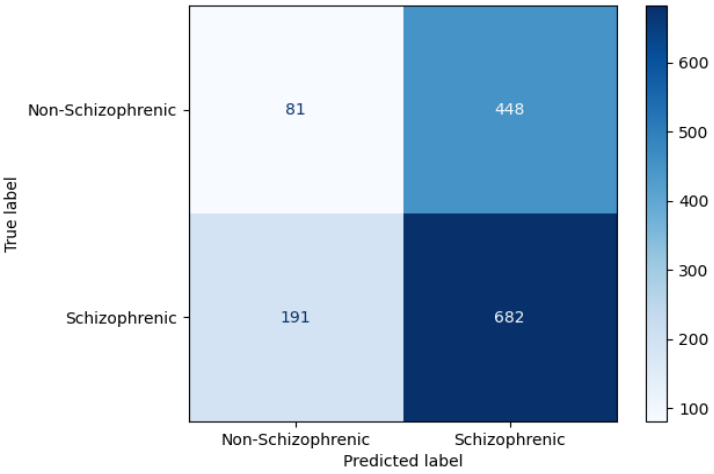

Figure 9: Confusion matrix from forth experiment- brain extraction

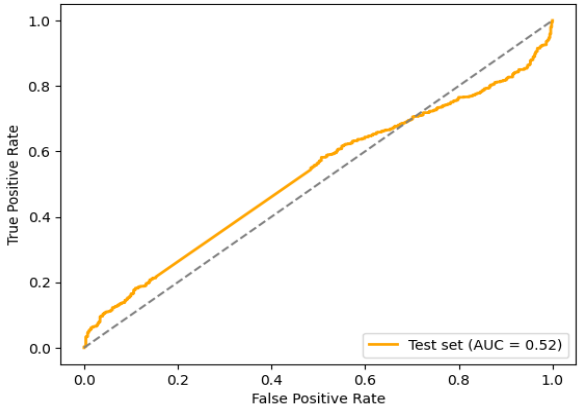

Figure 10: ROC Curve from forth experiment- brain extraction

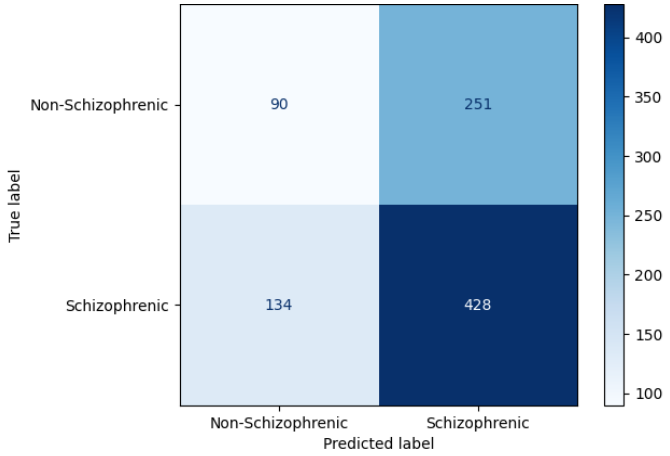

Figure 11: Confusion matrix from fifth experiment- cropping

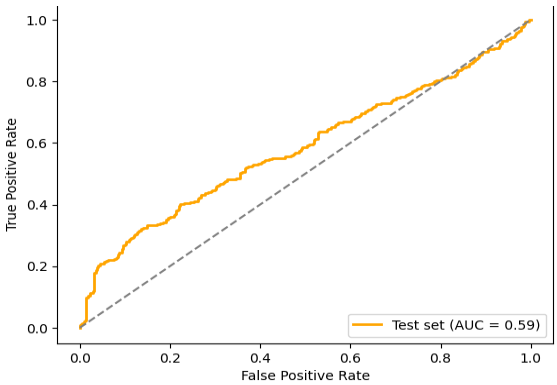

Figure 12: ROC Curve from fifth experiment- cropping

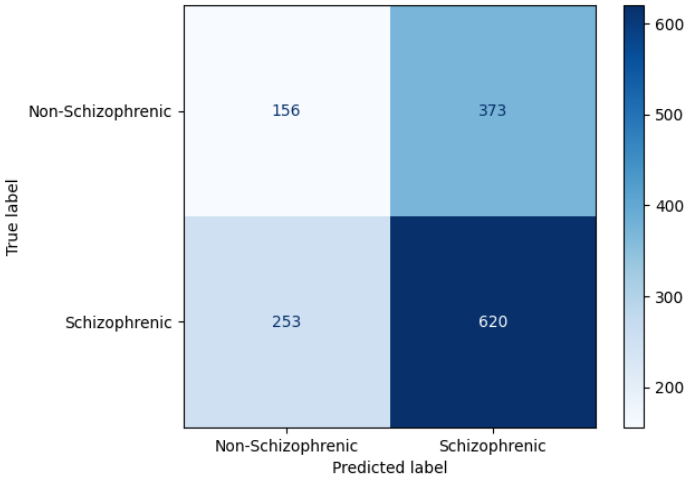

Figure 13: Confusion matrix from sixth experiment- smoothing

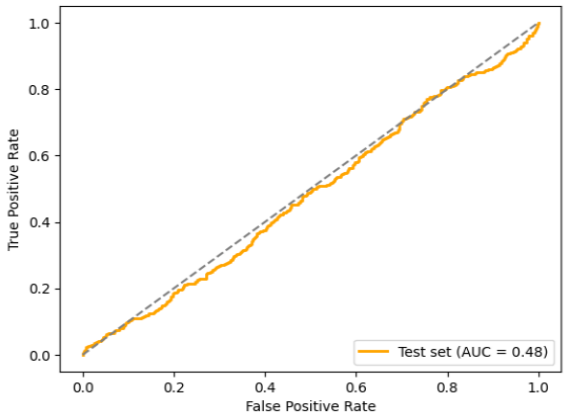

Figure 14: ROC Curve from sixth experiment- smoothing

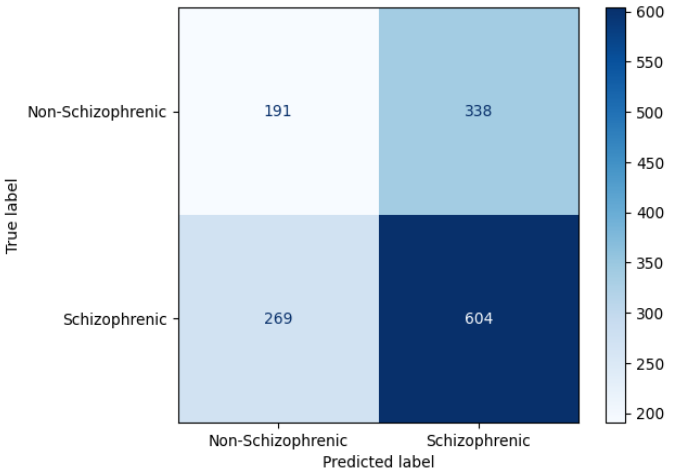

Figure 15: Confusion matrix from seventh experiment- resampling + normalization

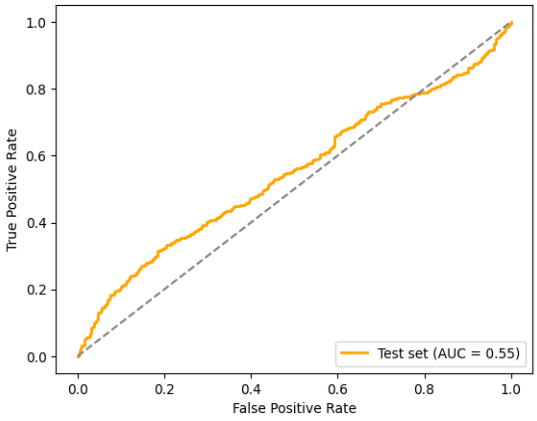

Figure 16: ROC Curve from seventh experiment- resampling + normalization

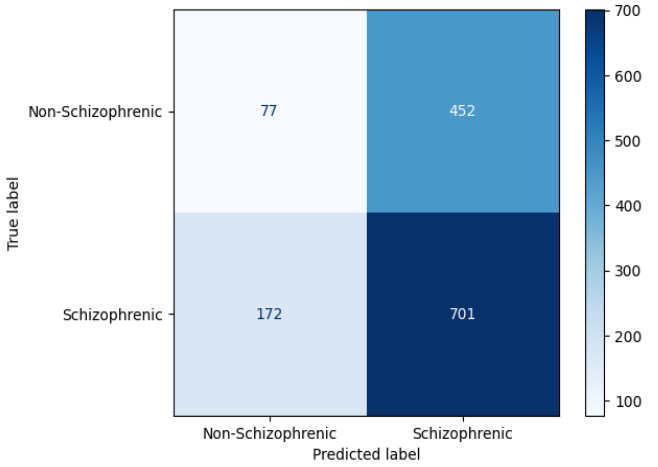

Figure 17: Confusion matrix from eighth experiment- resampling + normalization + brain extraction

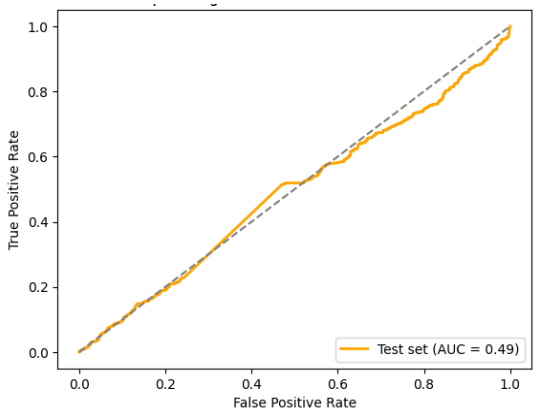

Figure 18: ROC Curve from eighth experiment- resampling + normalization + brain extraction

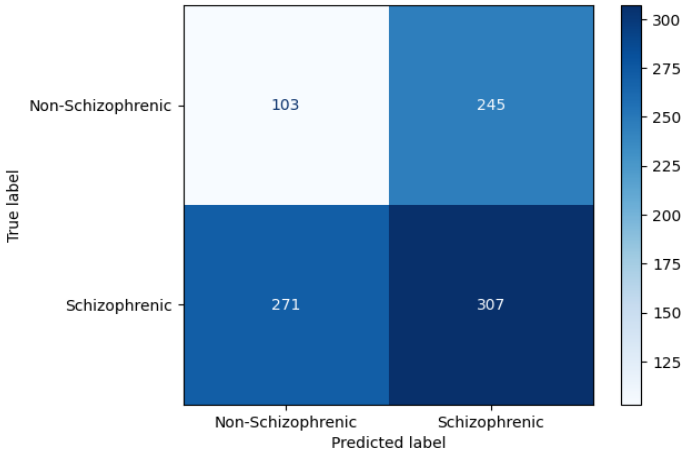

Figure 19: Confusion matrix from ninth experiment- resampling + normalization + brain extraction + cropping

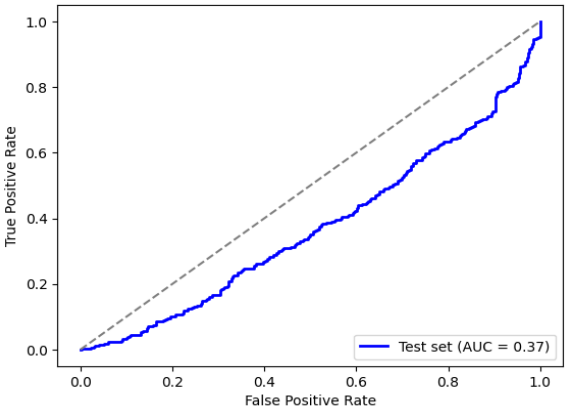

Figure 20: ROC Curve from ninth experiment- resampling + normalization + brain extraction + cropping

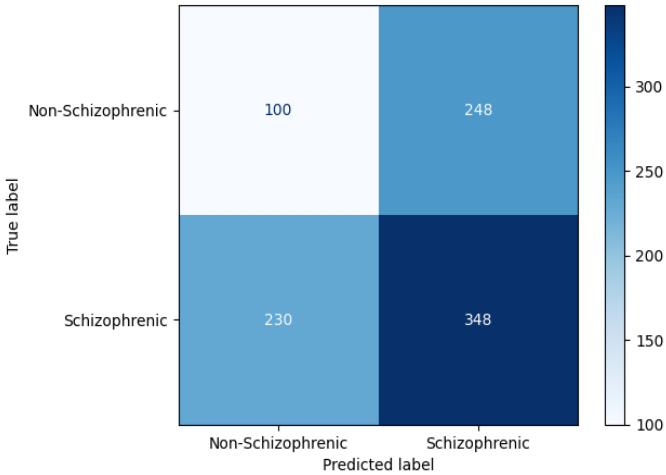

Figure 21: Confusion matrix from tenth experiment- resampling + normalization + brain extraction + cropping + smoothing

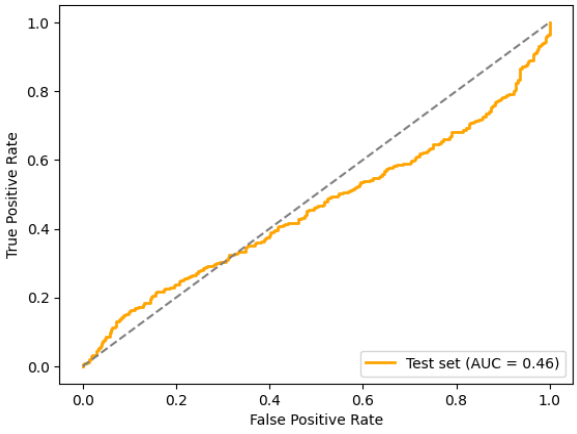

Figure 22: Confusion matrix from tenth experiment- resampling + normalization + brain extraction + cropping + smoothing

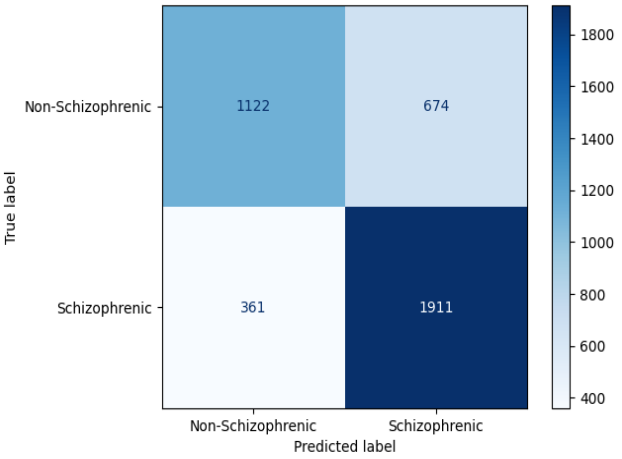

Figure 23: Confusion matrix from eleventh experiment- translation

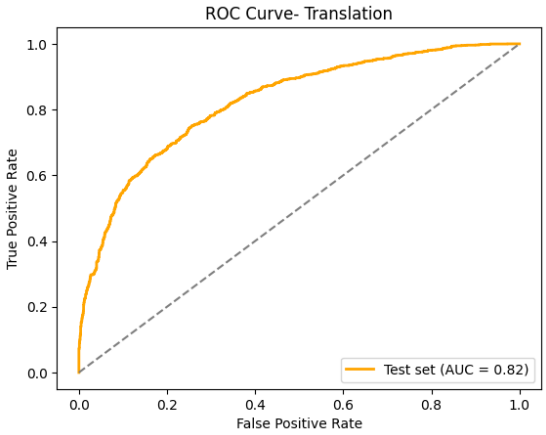

Figure 24: ROC Curve from eleventh experiment- translation

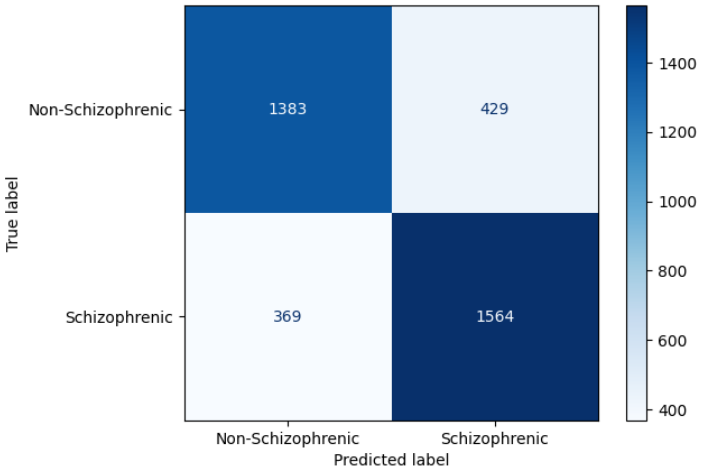

Figure 25: Confusion matrix from twelfth experiment- Rotation

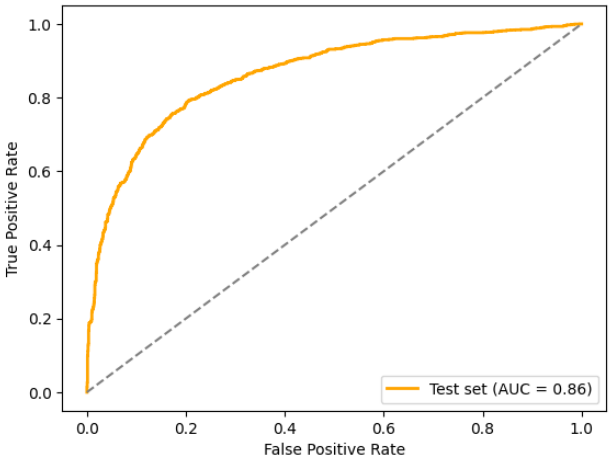

Figure 26: Confusion matrix from twelfth experiment- Rotation

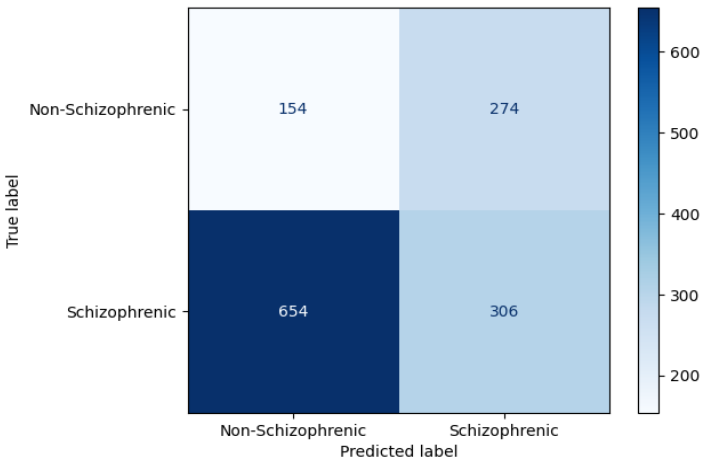

Figure 27: Confusion matrix from thirteenth experiment- Gaussian noise

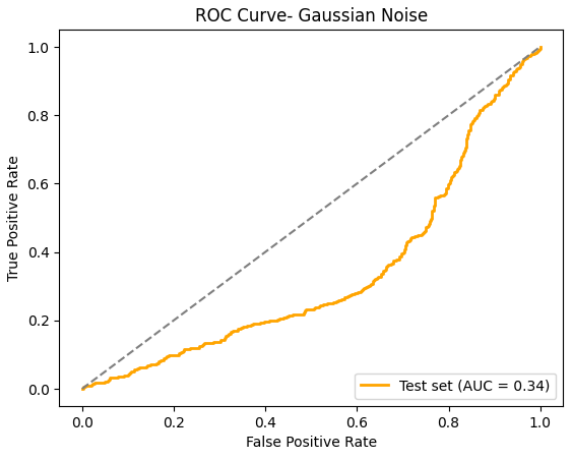

Figure 28: Confusion matrix from thirteenth experiment- Gaussian noise

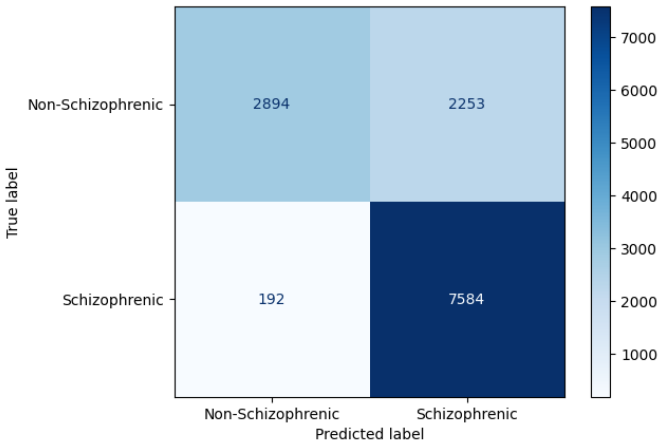

Figure 29: Confusion matrix from final training- Resampling + Normalization + Brain Extraction + Translation + Rotation

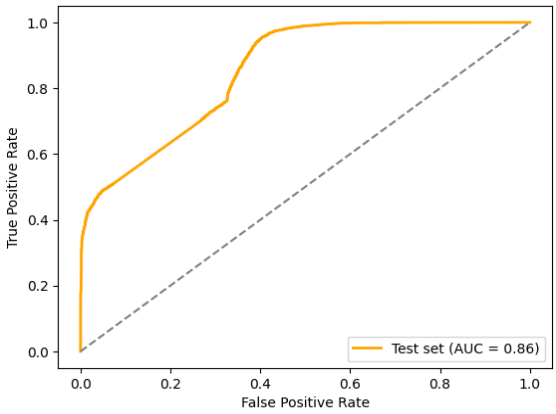

Figure 30: ROC CURVE from final training- Resampling + Normalization + Brain Extraction + Translation + Rotation

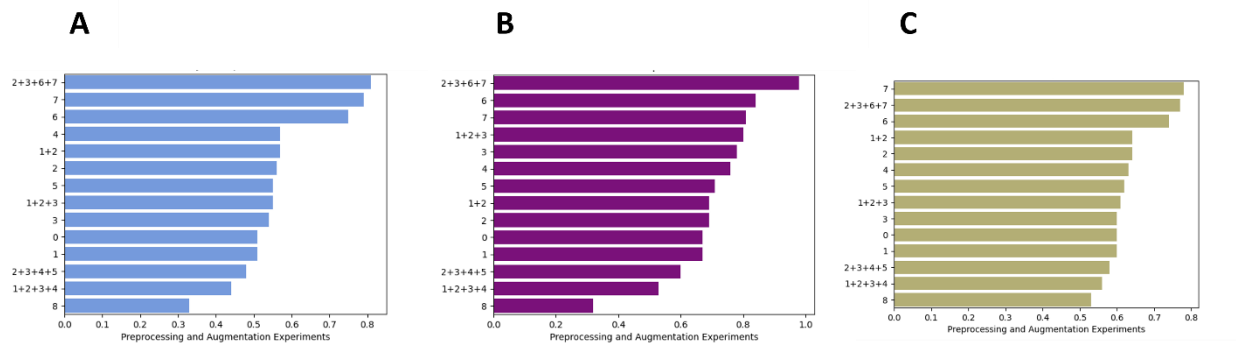

Figure 31: Comparison of metrics across training experiments.
Summary of the metrics for each preprocessing experiment (see Tables 3 and 4). (A) Comparison of accuracies across experiments. The highest accuracy is recorded in the final training combining resampling, normalization, brain extraction, translation, 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

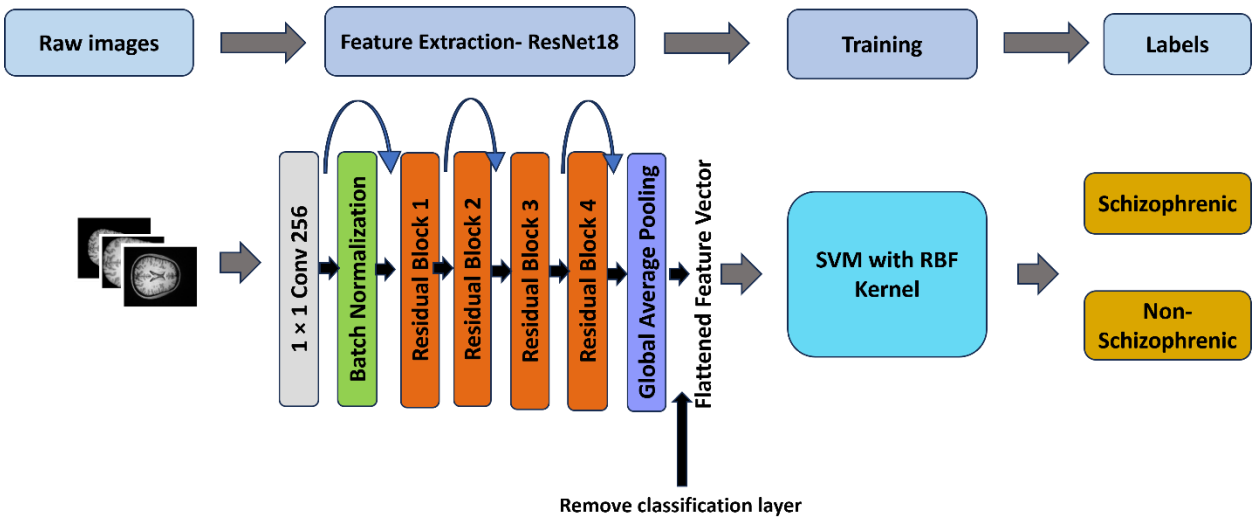

Figure 32: Training workflow and model architecture