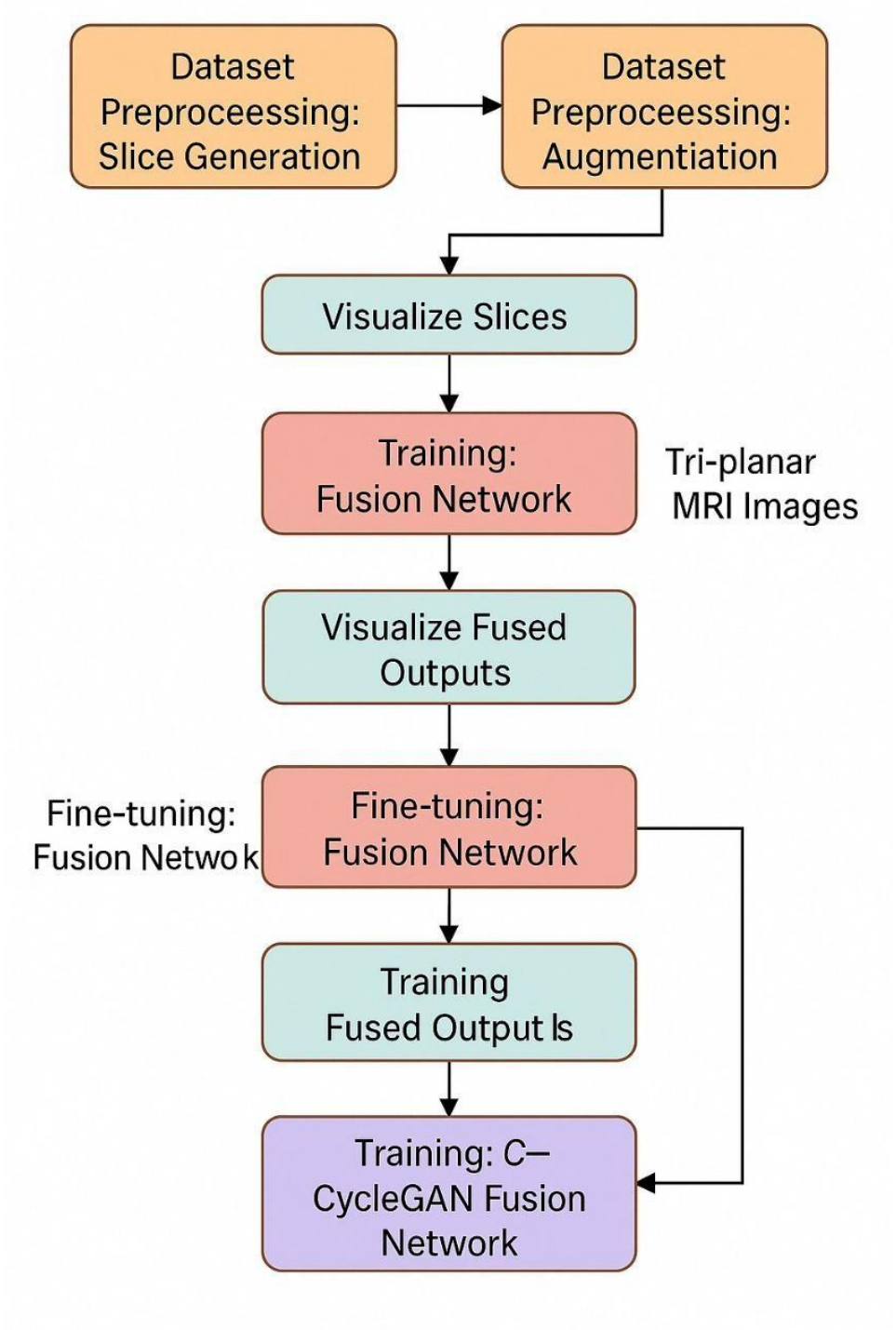
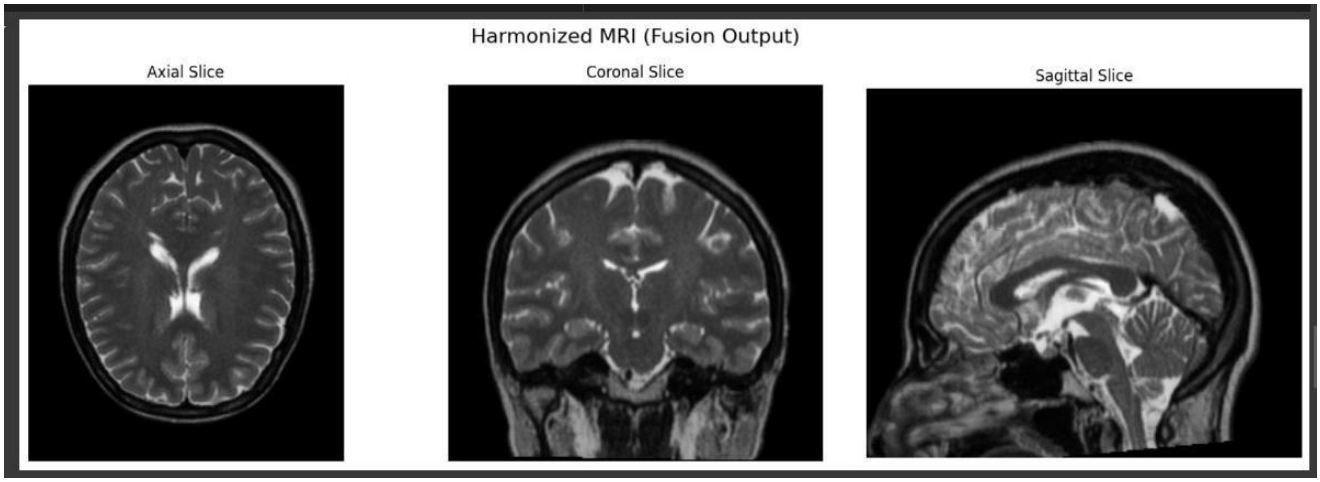
Image Harmonization using Deep Learning Models

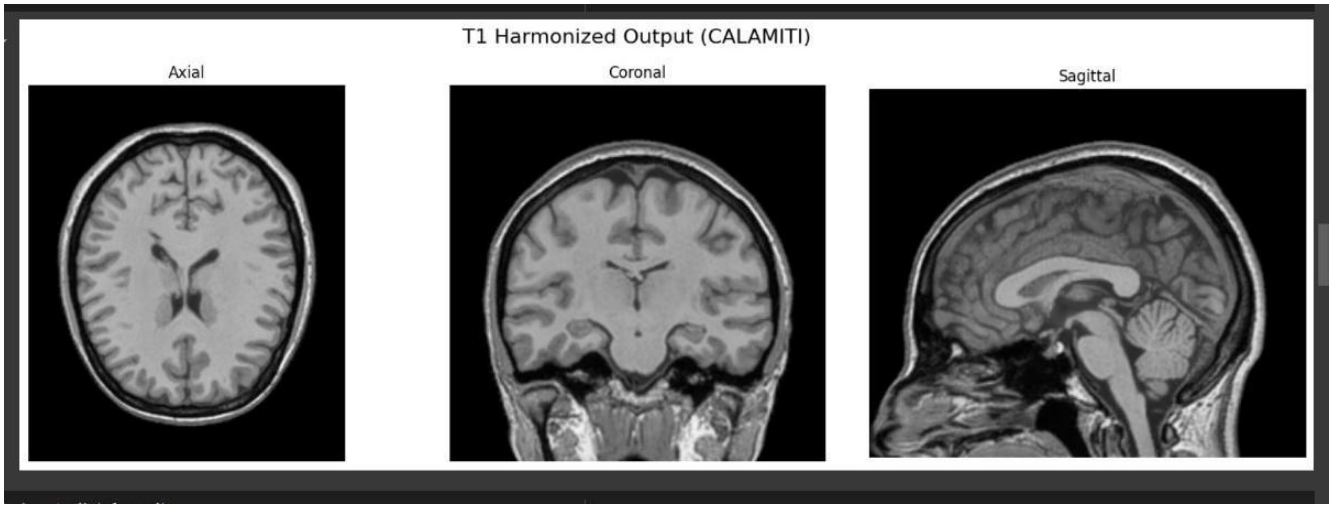
The implementation includes data preprocessing, training on annotated slices, validation, performance visualization, and an optional CycleGAN extension for unpaired image translation and reconstruction.

Methodology Diagram:

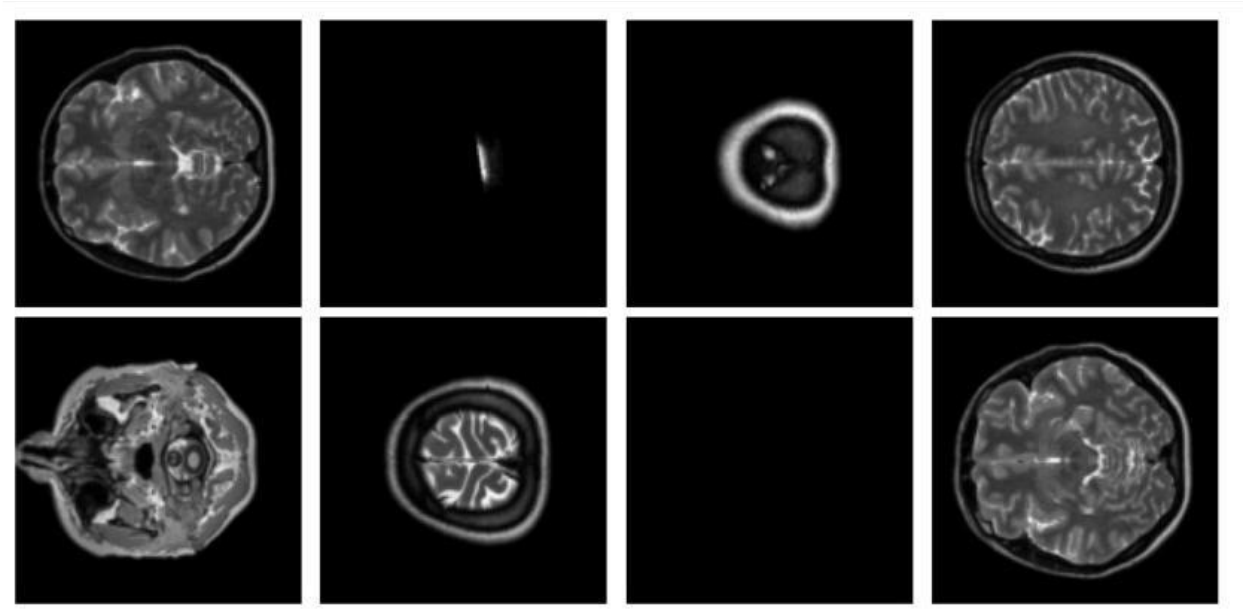


Output Images by using previous model



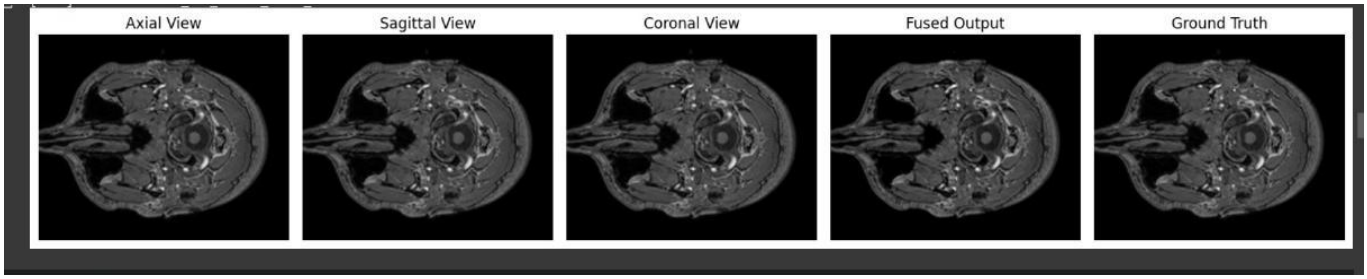


Included Augmentation into Pre-model



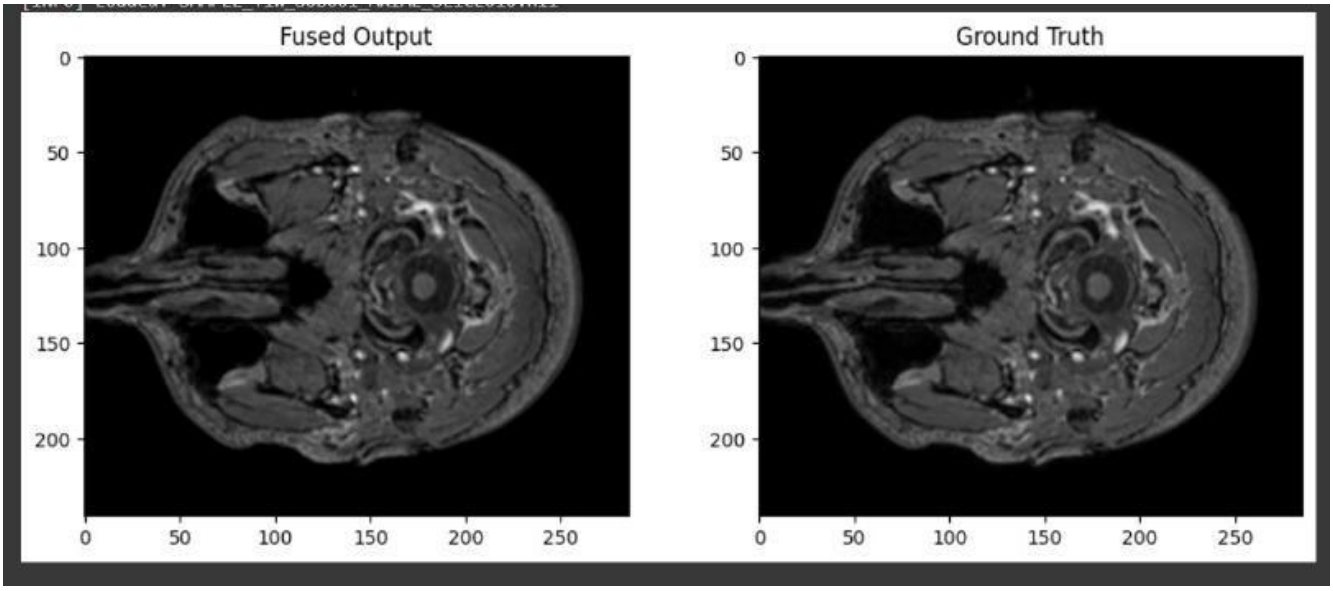
3 Major Improvements are included into model.

1. Trained the images over T1W using different dataset



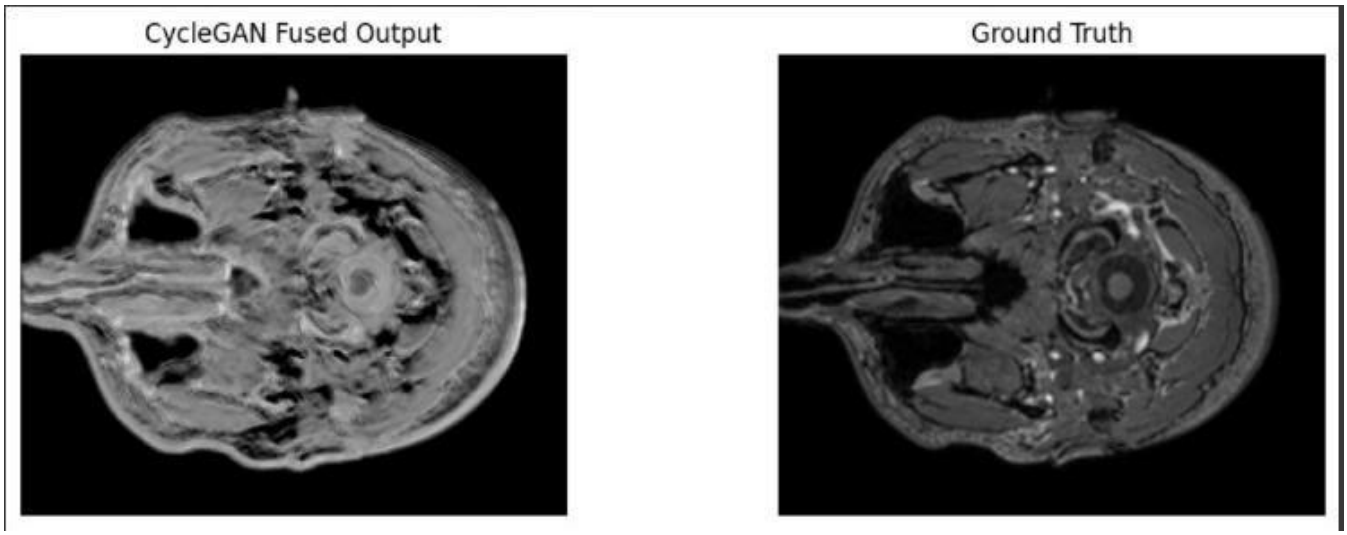
Visualized output after training over T1w

2. Including the Fine tuning into model



Visualized output after Fine tuning

3. Included CycleGAN model



Visualized output after including CycleGAN.

Other images:

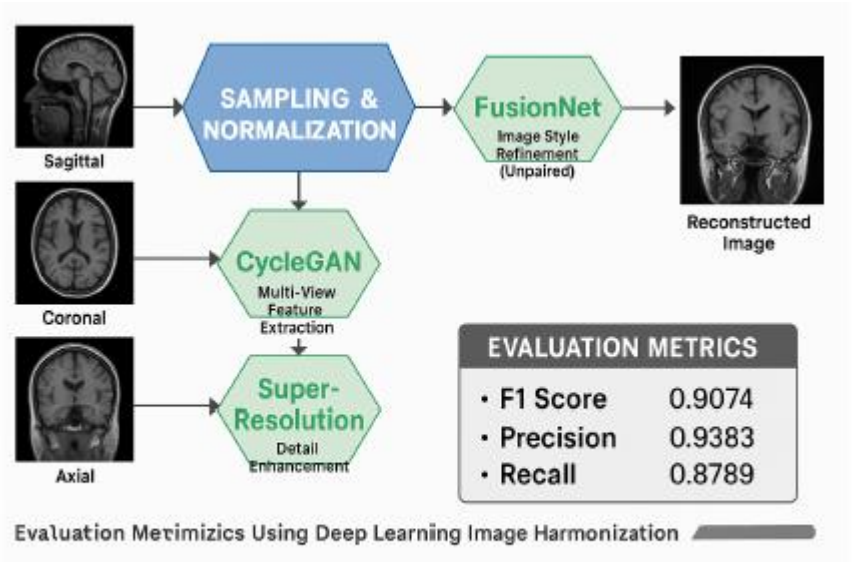


Figure 3: Overall result

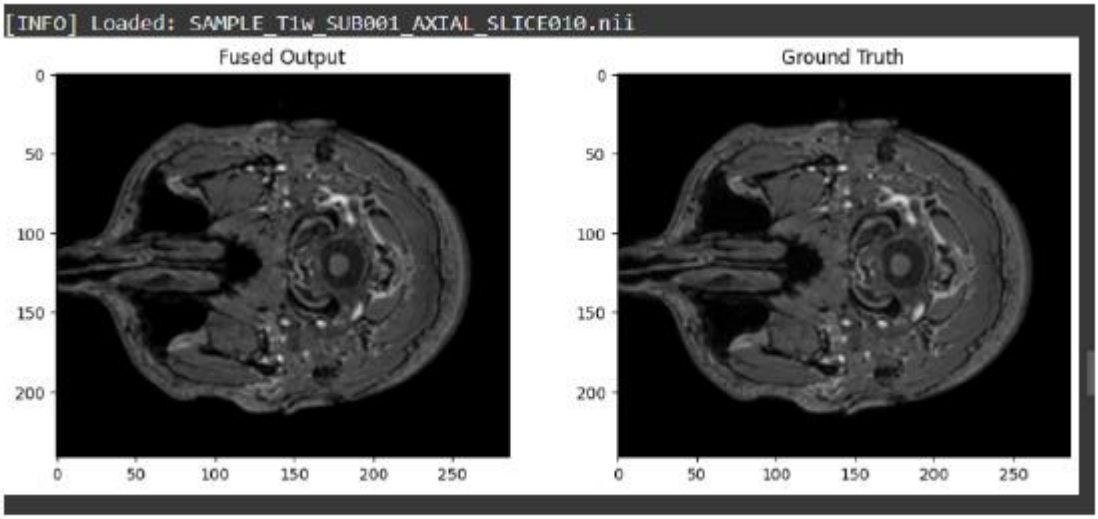


Figure 4: Fine Tuned Output

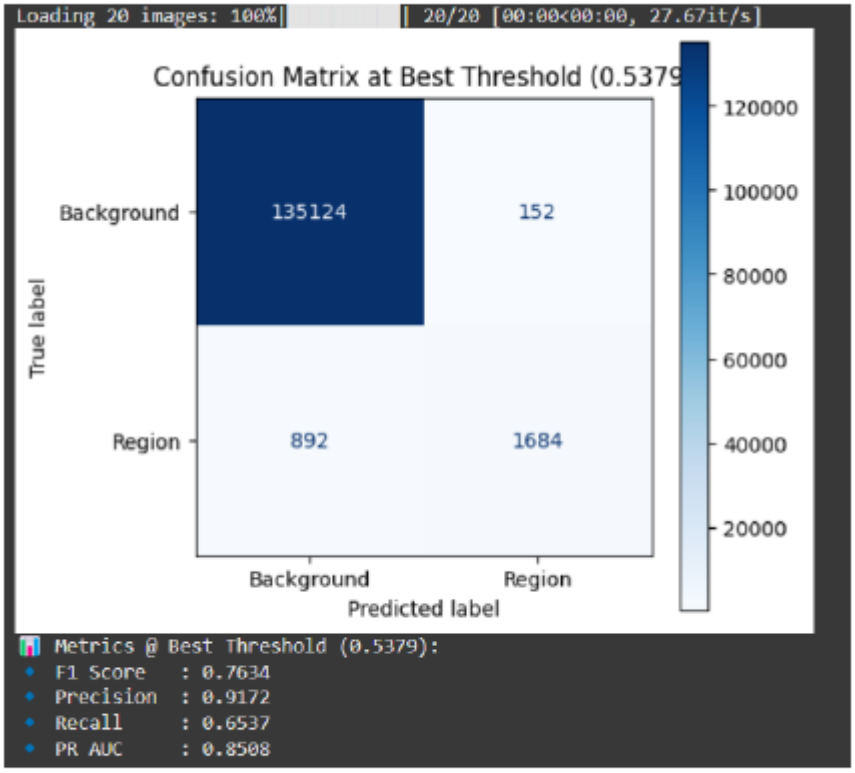


Figure 5: Overall Confusion Matrix with Best Threshold

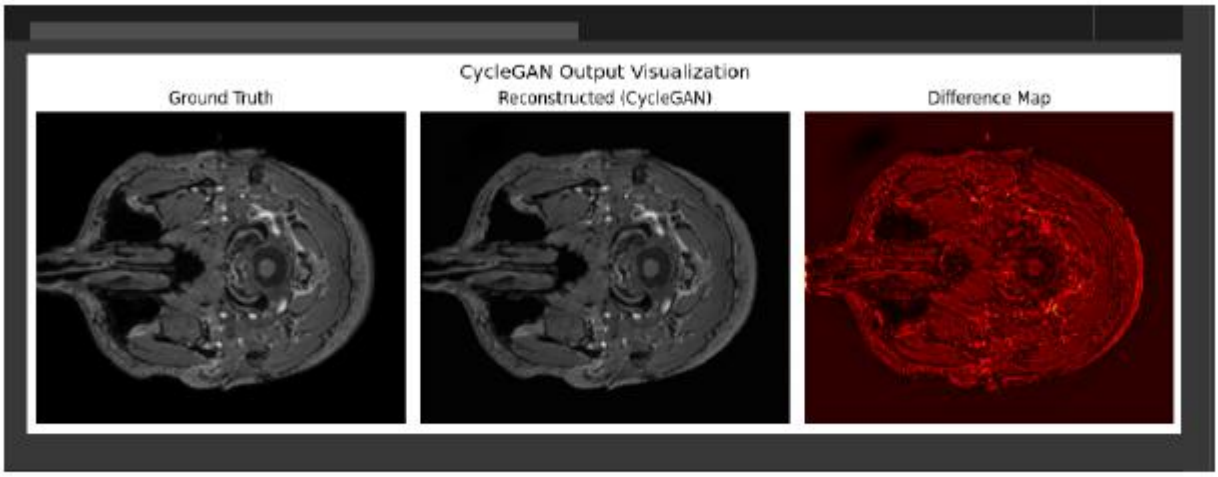


Figure 6: CycleGAN Output

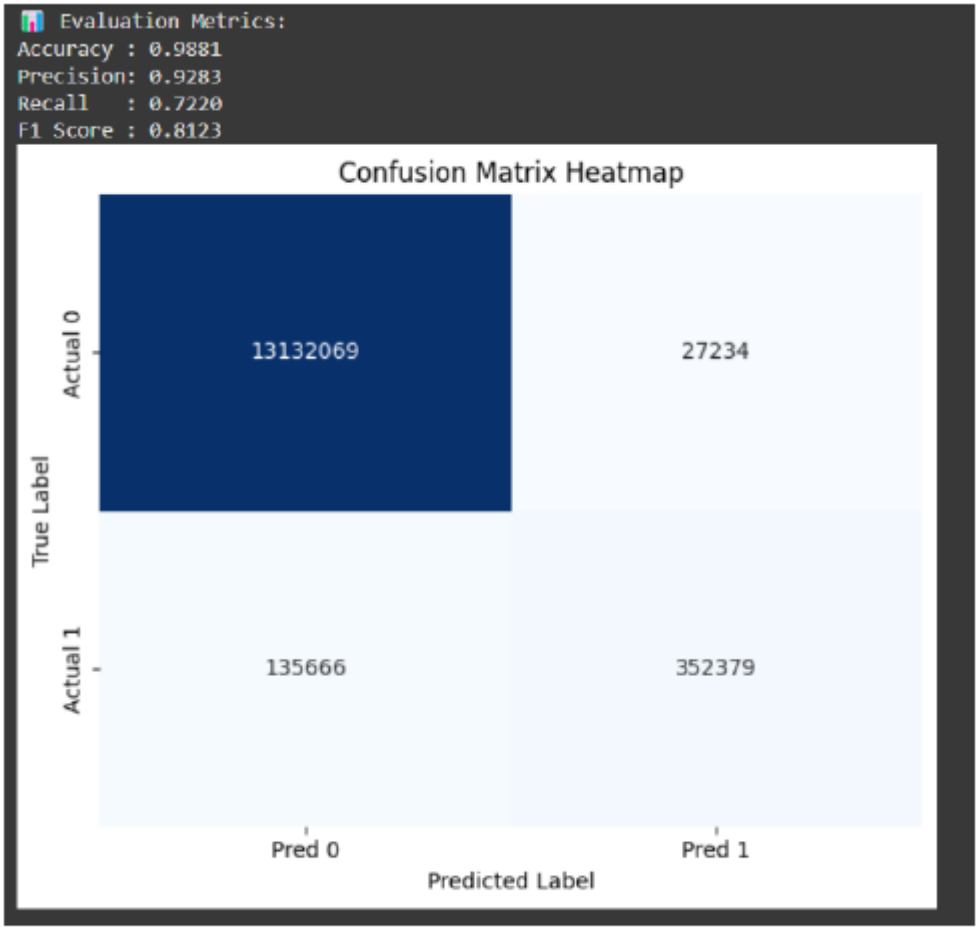


Figure 7: Confusion Matrix Defining Accuracy

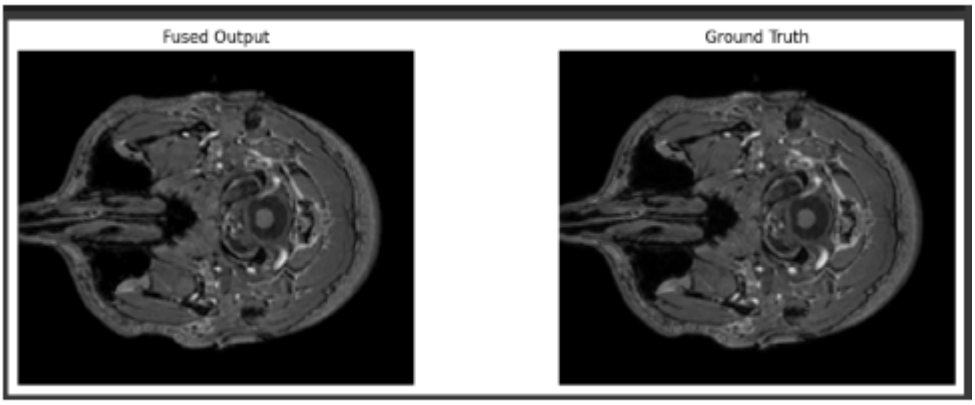


Figure 8: Super Resolution

Our dataset and source code link:
https://drive.google.com/drive/folders/1KCrTvVHFd8kkLehJ4vhd3EULDdkHiboN?usp=sharing

Our implementation:
https://colab.research.google.com/drive/1NLRObqVRePSPP5PEQwZBF5aboRmoowD?usp=sharing