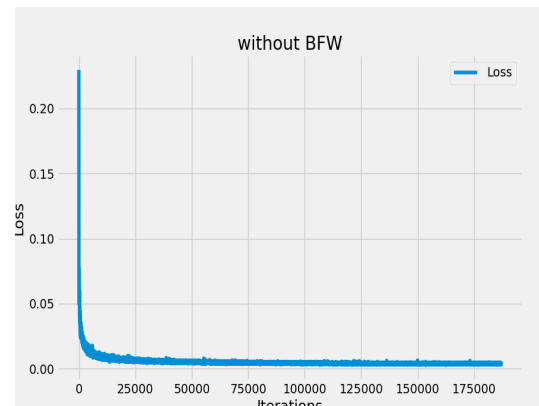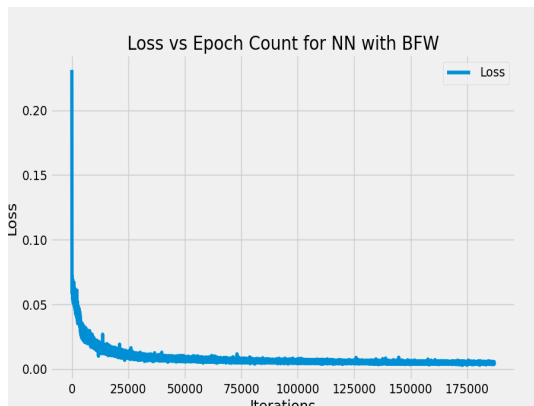# Results from Autoencoder Proof of Concept with MNIST Dataset

Comparison of Loss with Number of Iterations/Epochs with and without BFW

Example Reconstruction of MNIST Digits without BFW

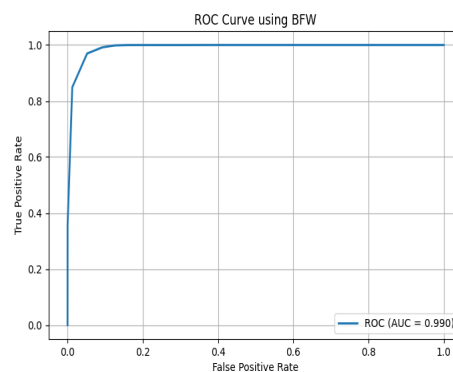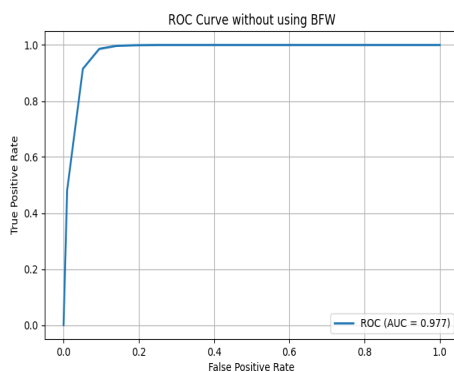Even though model only trained on digit 2, we see decent reconstruction for all digits

Example Reconstruction of MNIST Digits with BFW

Using BFW, we can see there is poor reconstruction for digits other than 2.
This is desired as it will allow us to distinguish between a 2 and any other digit based on reconstruction error.

Comparison of ROC (Receiver Operating Characteristic) Curve with and without BFW

Larger Area Under Curve is desirable since it allows us to select an error threshhold with both low false positive rate and high true positive rate.
We see that the AUC improves when we use the BFW which is consistent with our observations of the reconstructed images