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Neural Network and Deep Learning Assignment-11

[Code link]

a

[**Code link**]

Three face verification models were trained using different loss functions: Binary Cross-Entropy Loss, Contrastive Loss, and Triplet Loss, respectively. The outputs for each model are presented below:-

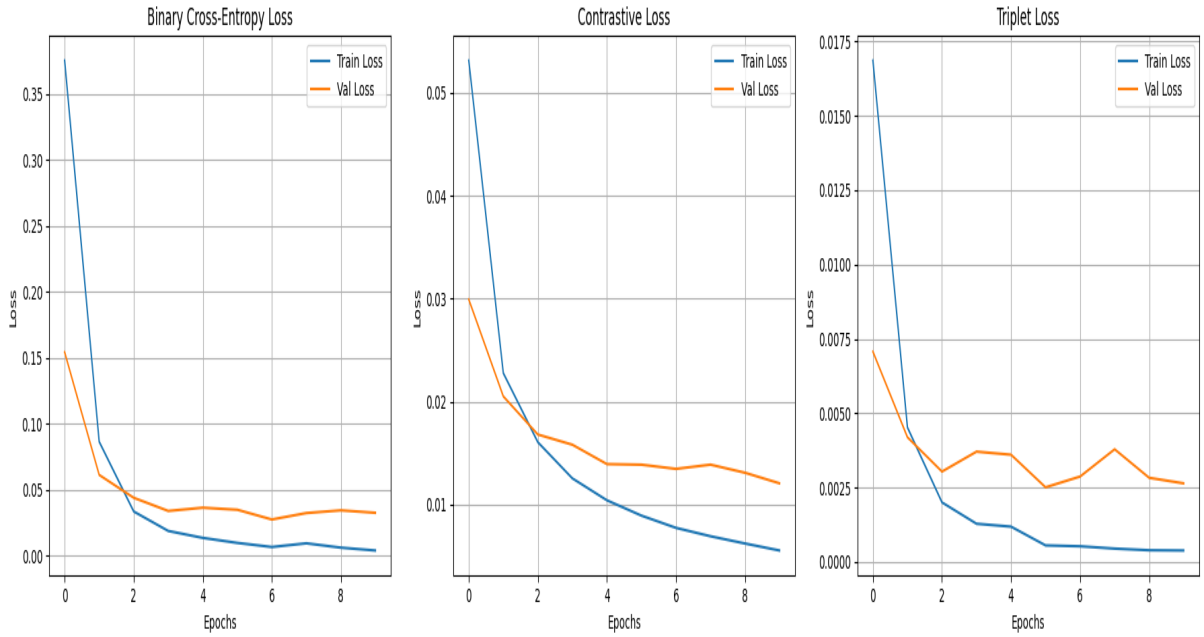

Figure 1: Training and Validation Loss Curves for Face Verifiers Using BCE, Contrastive, and Triplet Losses

b

[**Code link**]

After training the VAE with two different reconstruction losses which are the Binary Cross-Entropy (BCE) and Mean Squared Error (MSE) loss the reconstructed images are shown below. As can be observed, the reconstructions obtained using MSE loss are clearer compared to those generated using BCE loss.

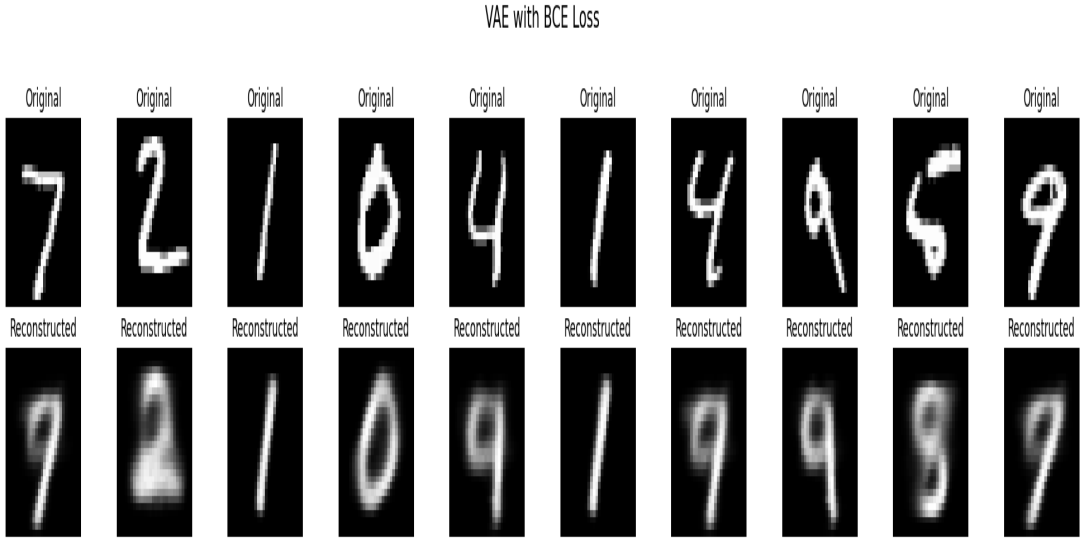

Figure 2: Original and Reconstructed Images with BCE Loss

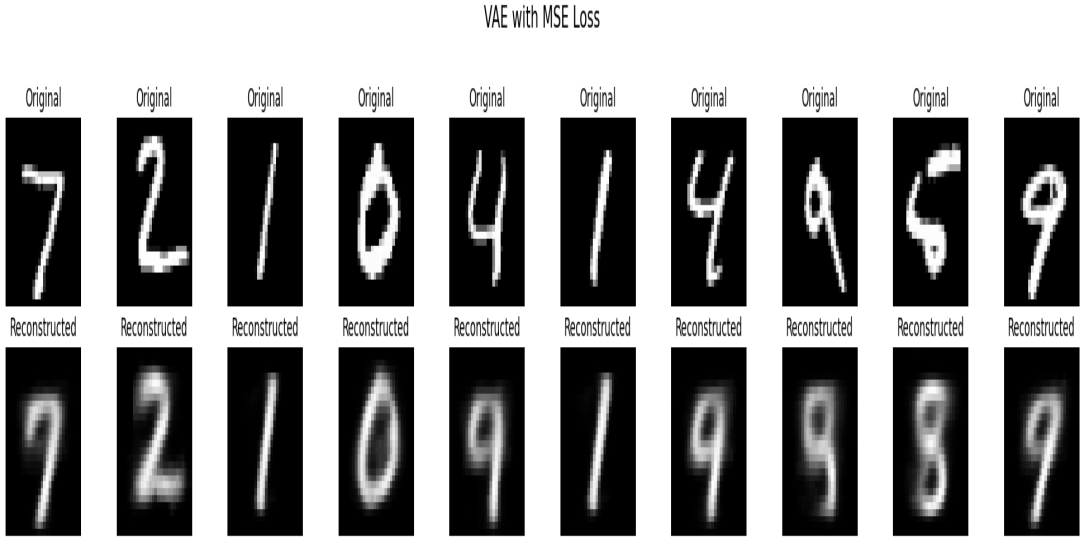

Figure 3: Original and Reconstructed Images with MSE Loss

Here is the comparison of training and validation loss curves for the reconstruction task using Binary Cross-Entropy (BCE) loss and Mean Squared Error (MSE) loss. The curves show how each loss function affects the model's learning and generalization performance during training.

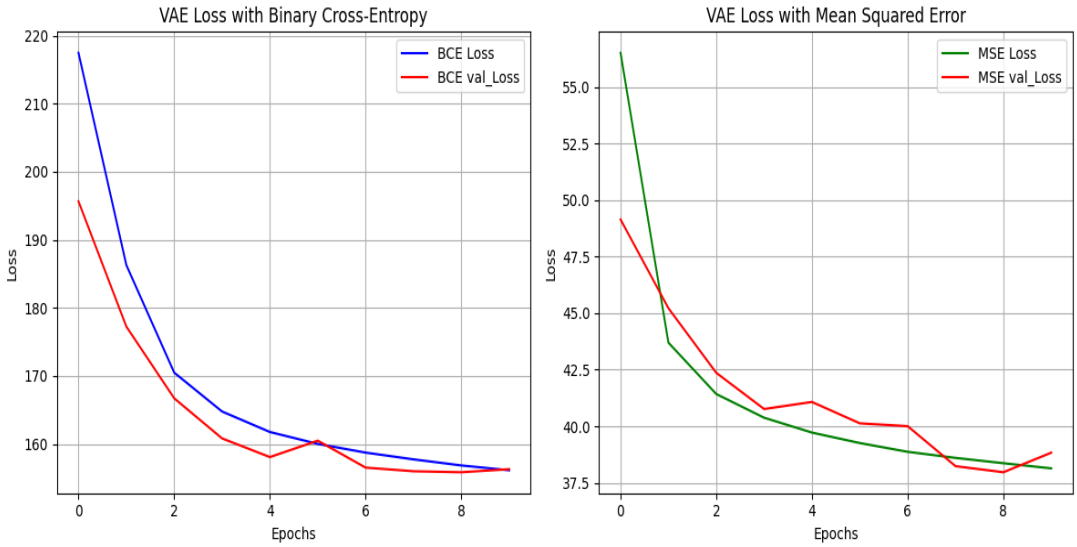

Figure 4: Training and Validation Loss Curves for VAE Using BCE and MSE Reconstruction Losses