2. Both the Linear AE and PCA are unsupervised data reduction techniques using linear transformations. While Linear AEs reduce data to lower dimensions and reconstruct it by minimizing reconstruction error, PCA does this by finding a principal component analysis which captures the most variance. Without any nonlinear activation functions, an autoencoder resembles PCA. However, PCA tends to be more efficient in doing so with limited linear reduction work.  
  
4.Convolutional Neural Network (CNN AEs) outperform Dense AEs because they are better at capturing spatial features in images, resulting in superior reconstructions and lower mean squared error (MSE).

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5. Image denoising AE performs better than Vanilla CNN AE due to its ability to generalize better by handling noisy inputs.

6. VAEs introduce a probabilistic latent space for better generative capabilities, while regular AEs focus only on reconstruction.

Git link:- <https://github.com/Dulsha-amilan/DL_Lab7.git>