Comparative Analysis of Denoising Autoencoder and Convolutional Neural Networks for MNIST Classification

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Research Question: How Do Denoising Autoencoders (DAE) and Convolutional Neural Networks (CNN) Compare in MNIST Digit Classification Under Varying Noise Conditions?

Why this research is important	Improves classification models' performance in noisy settings, vital for real-world applications like automated systems and medical imaging.
What we know and don’t know	We understand each model's strengths; however, their comparative efficiency under varied noise conditions remains less explored.
Our Experiment	Conducts a side-by-side comparison of two leading models under different noise levels to evaluate their accuracy and resilience.
Our Hypothesis	Predicts CNNs will outperform in lower noise, while DAEs will manage higher noise better but may falter with very high noise levels.