

Autoencoders - Testes e Aplicações

CPE 727 - Aprendizado de Profundo

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Santos e Jefferson Osowsky**

27 de novembro de 2025

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1 Denoising Autoencoder

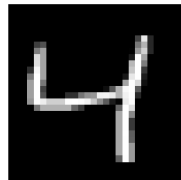
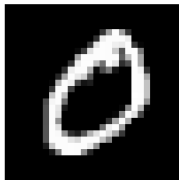
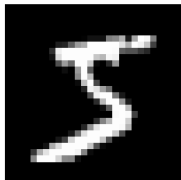
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Dataset

1 Denoising Autoencoder

MNIST Dataset



Noisy MNIST Dataset

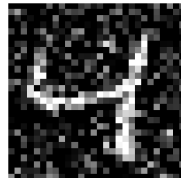
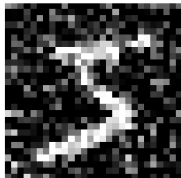


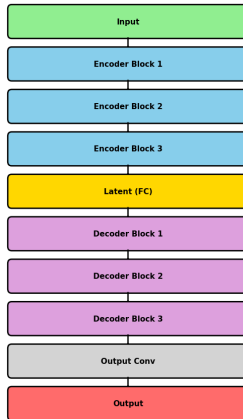
Figura: Imagens do MNIST e Noisy MNIST. Ruído Gaussiano com 0.3 de desvio padrão.

Modelo

1 Denoising Autoencoder

- Input: imagens 28x28x1 (Noisy MNIST)
- Encoder:
 - 3 Camadas Convolucionais (Kernel 3x3 e Stride 1)
 - BatchNorm
 - ReLU
 - MaxPooling(Kernel 2x2, Stride 2)
- Decoder:
 - 2 Camadas Convolucionais T. (Kernel 3x3 e Stride 2)
 - BatchNorm
 - ReLU
 - Camada Convolutacional T. Final (Kernel 3x3, Stride 1)
 - Sigmoid

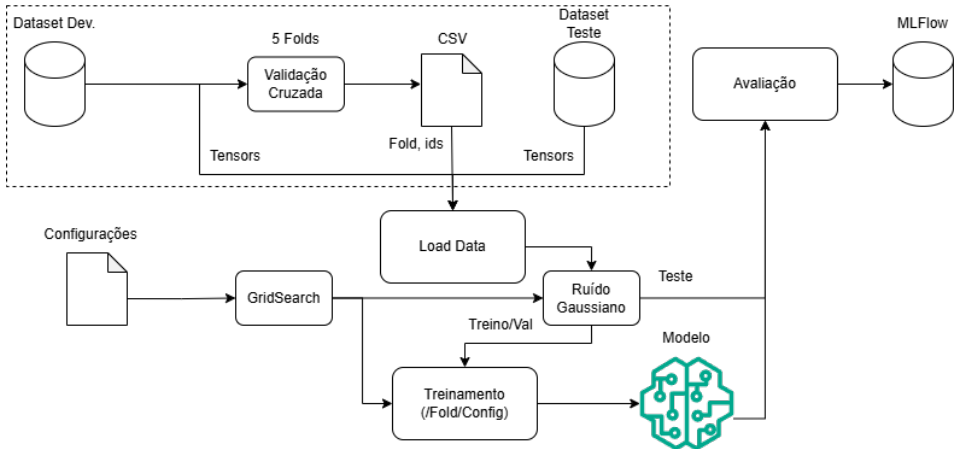
Denoising Autoencoder Architecture



Metodologia

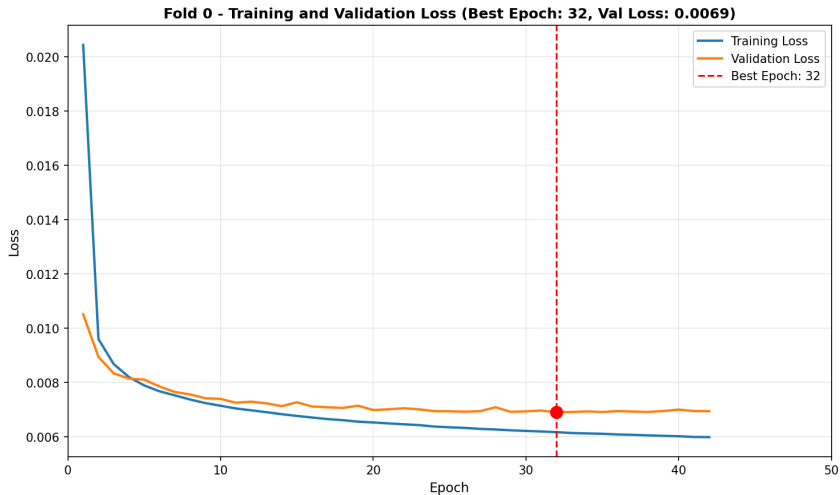
1 Denoising Autoencoder

Data Loaders



Treinamento

1 Denoising Autoencoder



Resultado - Denoising

1 Denoising Autoencoder

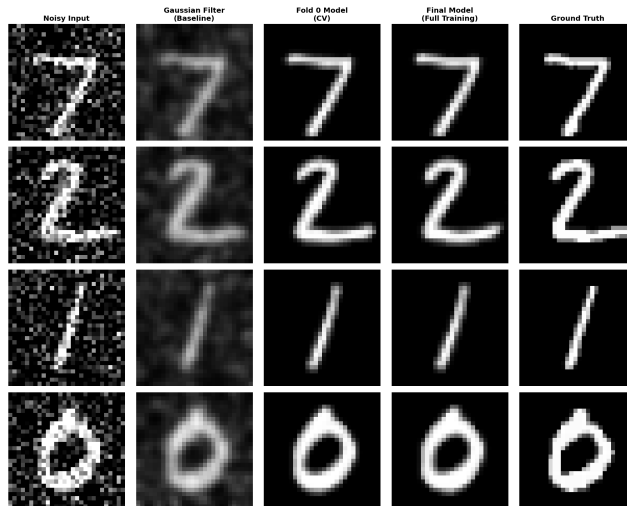


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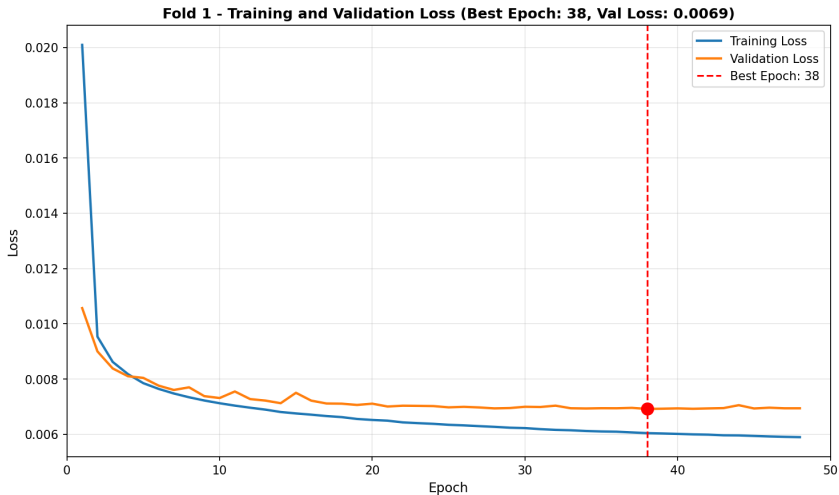
2 Anexos

► Denoising Autoencoder

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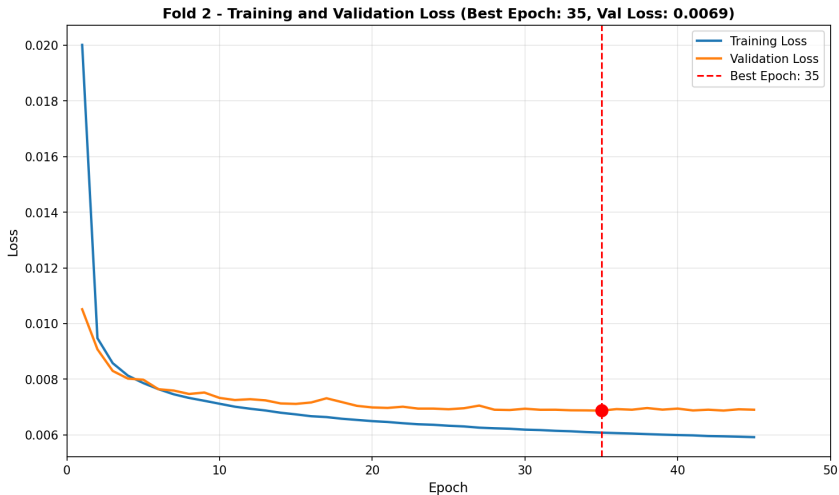
Treinamento

2 Anexos



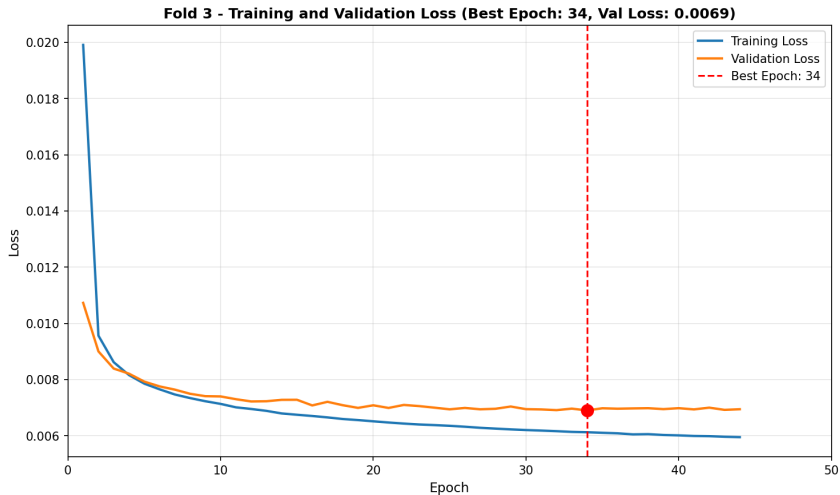
Treinamento

2 Anexos



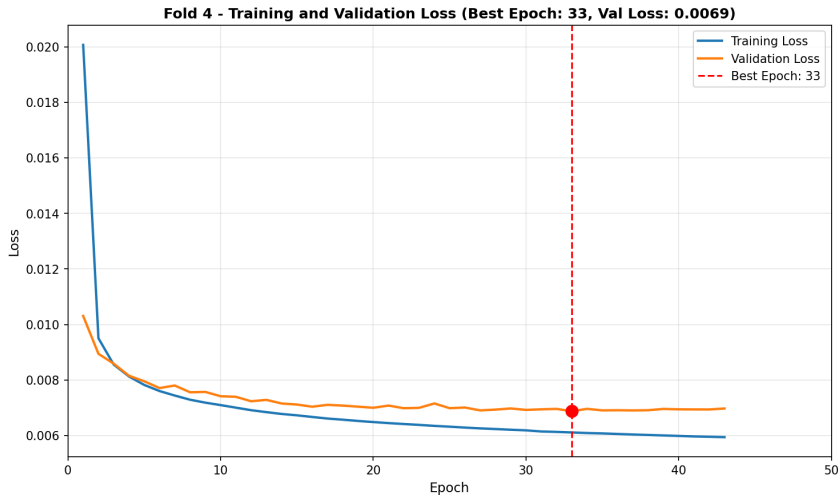
Treinamento

2 Anexos



Treinamento

2 Anexos



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Obrigado pela Atenção!

Alguma Pergunta?

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