Exercise 9

Advanced Methods in Medical Image Analysis, Julia Wolleb

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Exercise 9: Denoising Autoencoder

Implement an Undercomplete Autoencoder (dim(z) < dim(x)) using CNNs for the MNIST data set. Train your autoencoder on the MNIST training set to denoise corrupted images. For this, follow the code snippet `undercomplete-autoencoder.py`. Test the performance of your denoising autoencoder on the MNIST test set. As indicated in the code snippet, you can (but don't have to) use Tensorboard for visualization.

- Design and implement the Autoencoder.
- Select the correct loss function.
- Implement the function `add-noise` to corrupt the input images.
- Report the training loss curve.
- Add noise on an image of the test set, and show the output of your model.
- Hand in your code, which does not throw exceptions.