Learn
Latent
Representations

Unsupervised and self-supervised learning

Auto-Encoders

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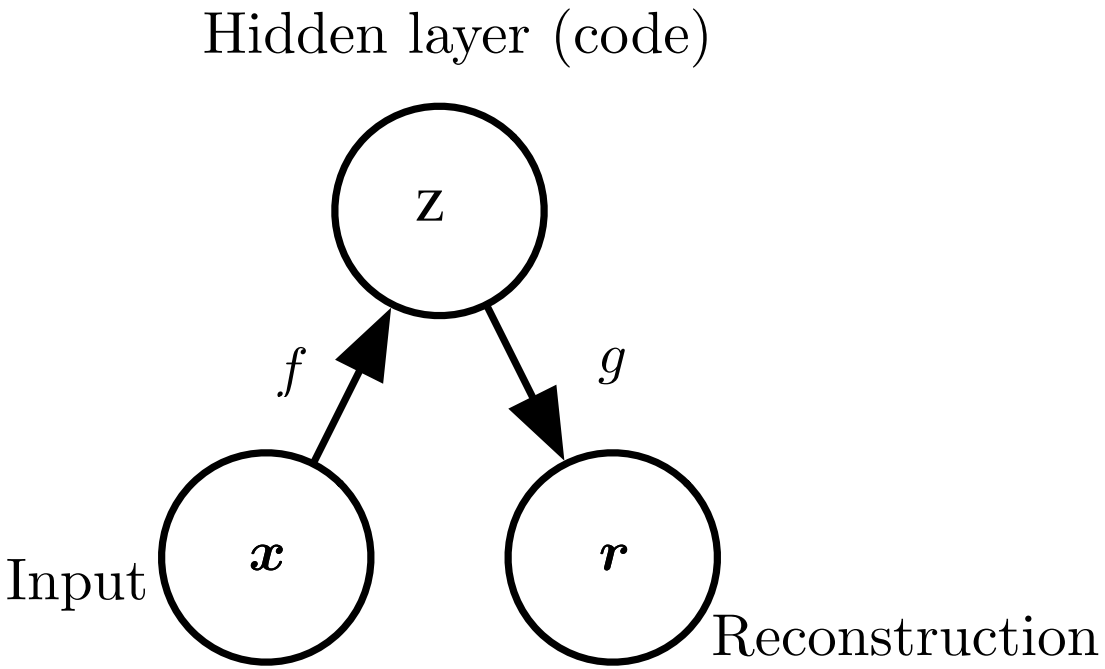
Compressed and Latent Representations

Compression

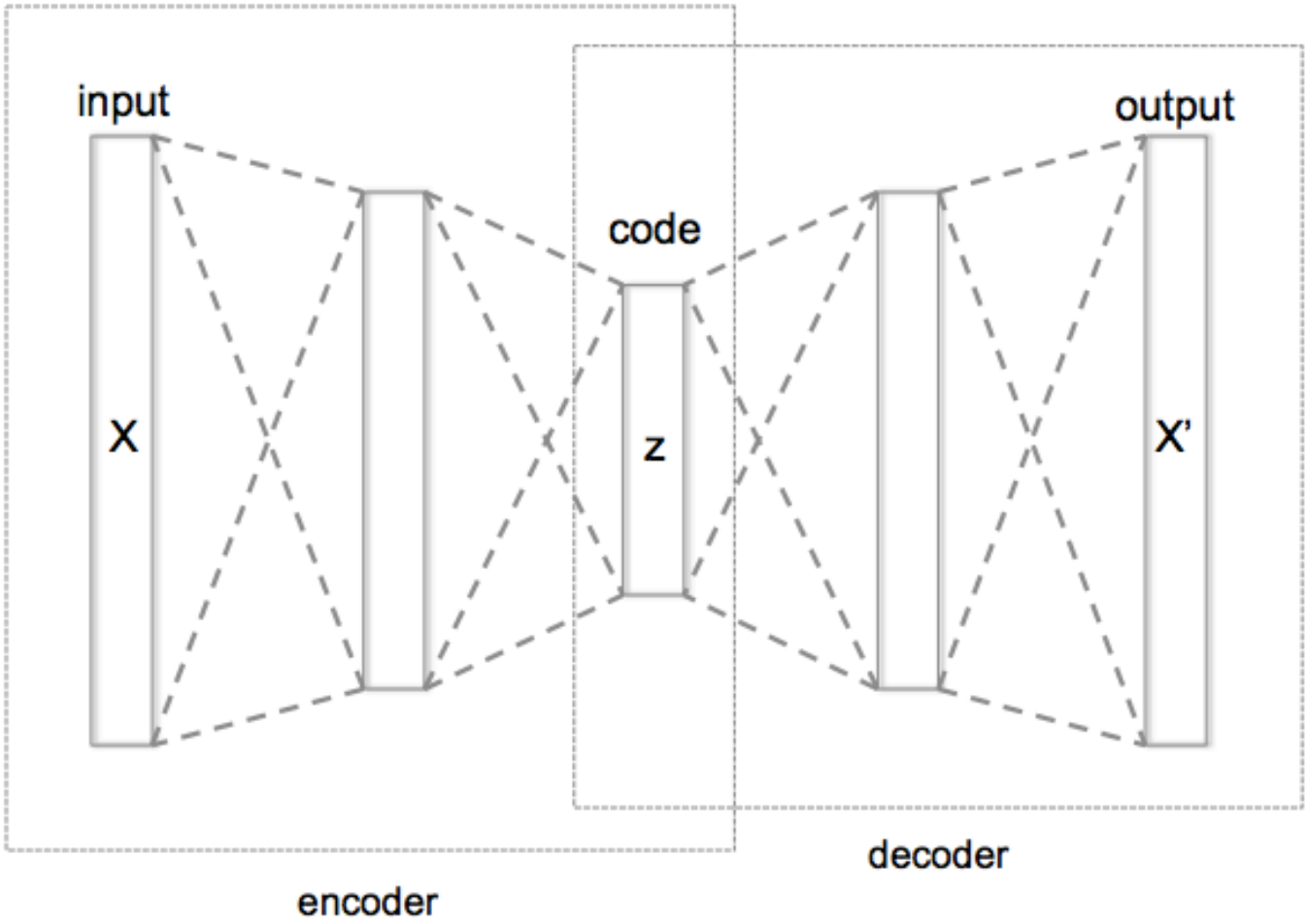
Generative Modelling from Latent Representations

Autoencoders

The aim of an autoencoder is to learn a representation (encoding) for a set of data, typically for dimensionality reduction, by training the network to ignore signal noise.



Deep Autoencoders



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[1] Image taken from wikipedia

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- In a denoising autoencoder, the loss should be computed on $\mathcal{L}(x, \hat{x})$ as opposed to $\mathcal{L}(\tilde{x}, \hat{x})$.

Sparse Autoencoders

- In a sparse autoencoder, there are more hidden units than inputs, but only a small number of the hidden units are allowed to be active at the same time.

Convolutional Autoencoders

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- Pretraining networks by learning your network weights using a stacked AE.