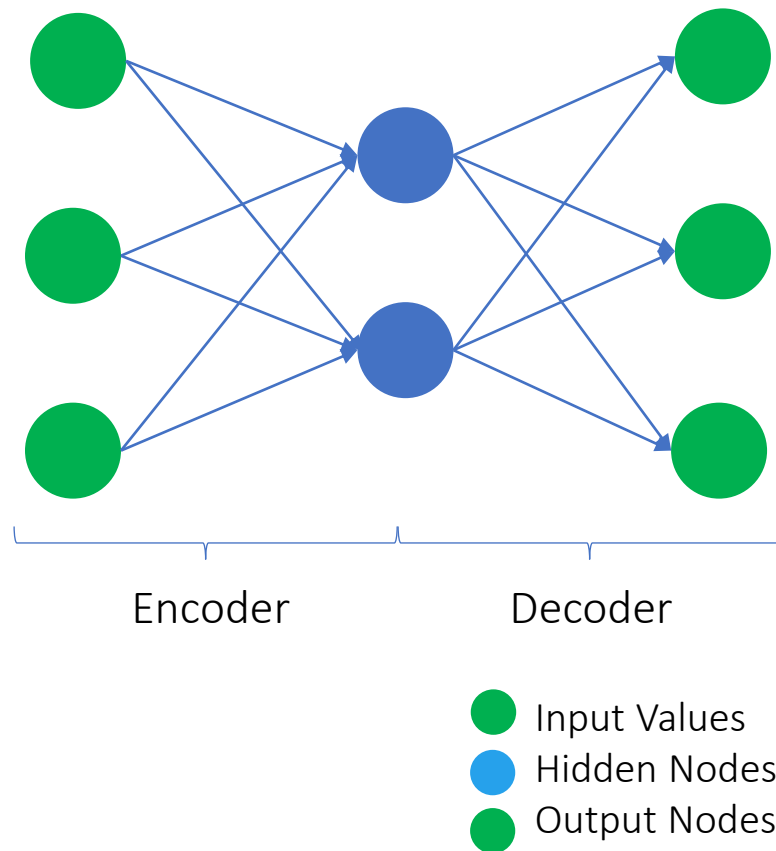


Autoencoders 101

Autoencoders

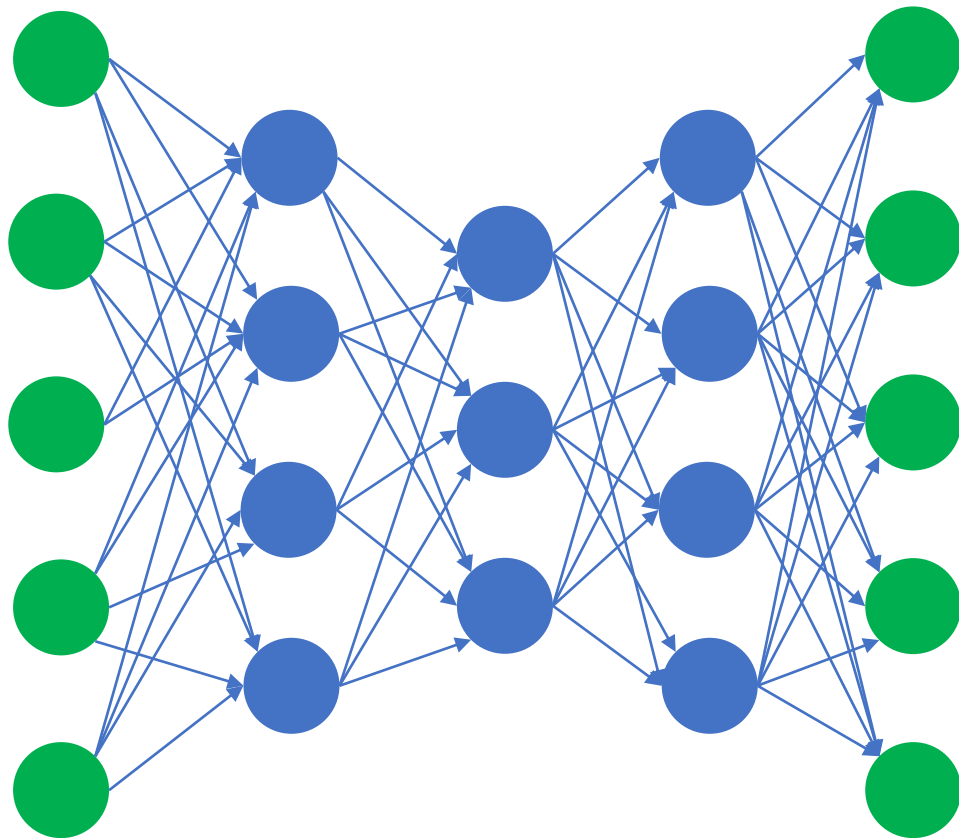
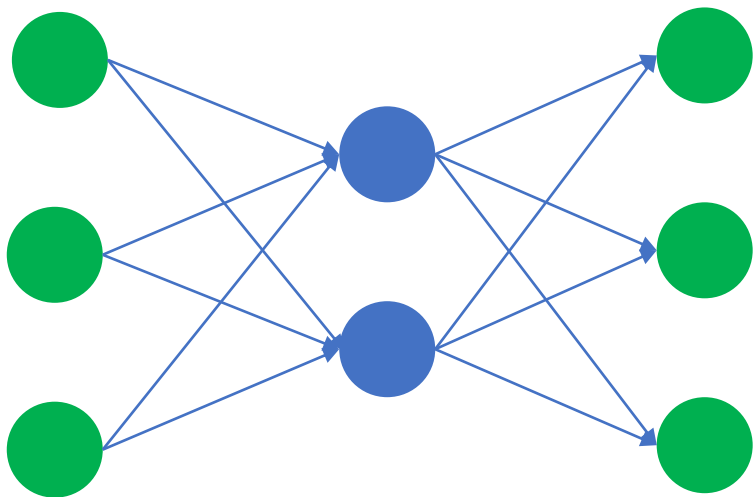
Introduction

- learns representation of input data
- unsupervised technique
- used for
 - dimensionality reduction
 - noise reduction
- input neurons and output neurons are identical
- model training: hidden layer „learns“ representation of input layer
- model application: encoder used for getting lower dimensional representation of data



Autoencoders

Shallow and Deep Autoencoders



Autoencoders

Applications

- Dimensionality Reduction / Compression
- Facial recognition
- Anomaly detection
- Denoising, e.g. images

Autoencoders

Coding

Original Images (64, 64, 1):



Latent Space (128):



Reconstructed Images (64, 64, 1):

96.9 % Compression

