

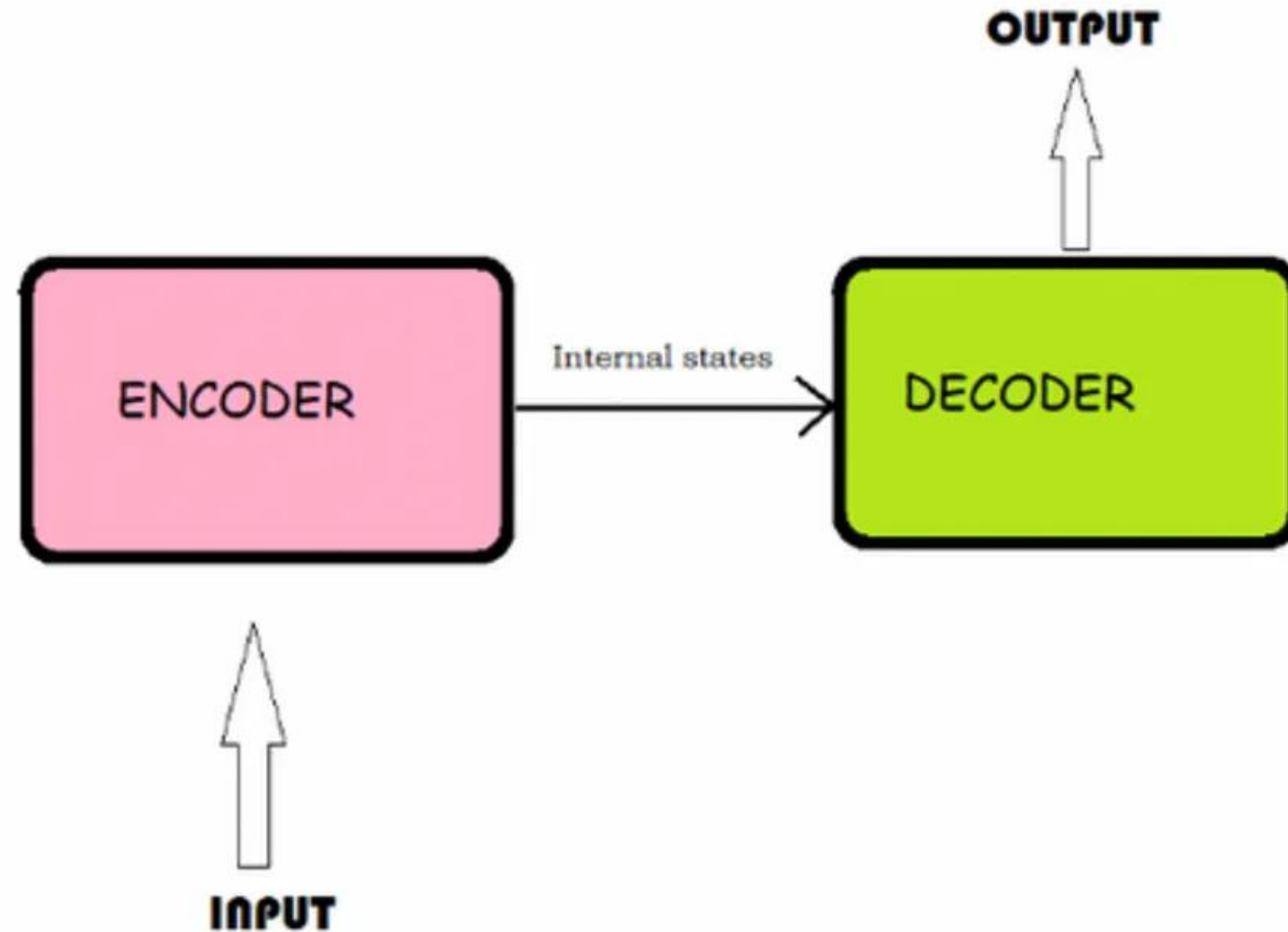
Encoder and Decoder

CV Jawahar

IIIT-H

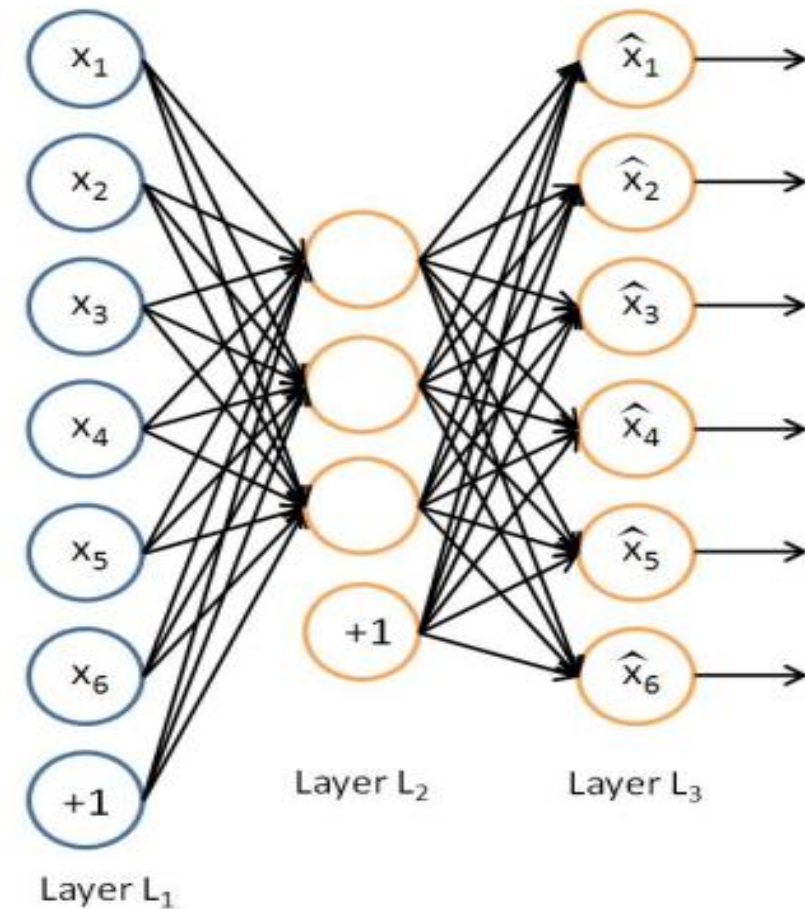
04 April 2025

Encoder and Decoder



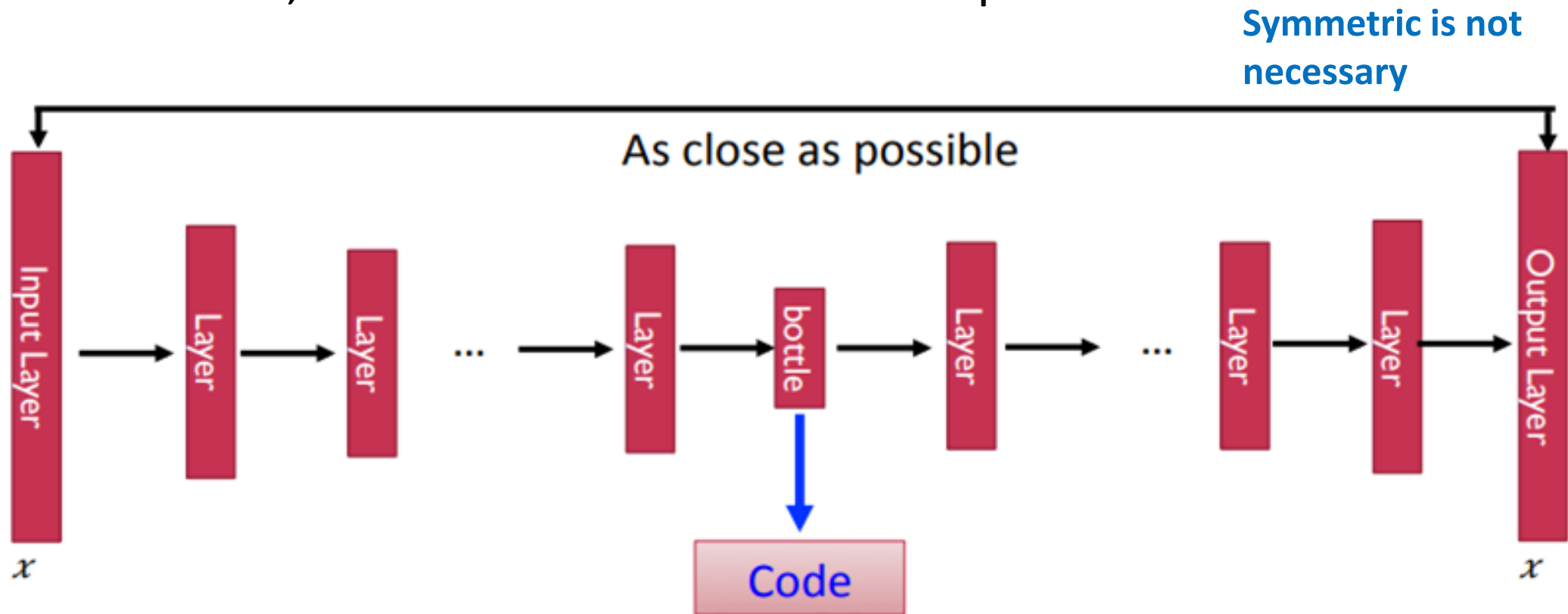
Auto-encoder

- Similar to MLP
- Input is the same as the output
- Network learns to reconstruct.
- “Bottleneck” layer learns a compact representation.



Deep Auto-encoder

- Of course, the auto-encoder can be deep

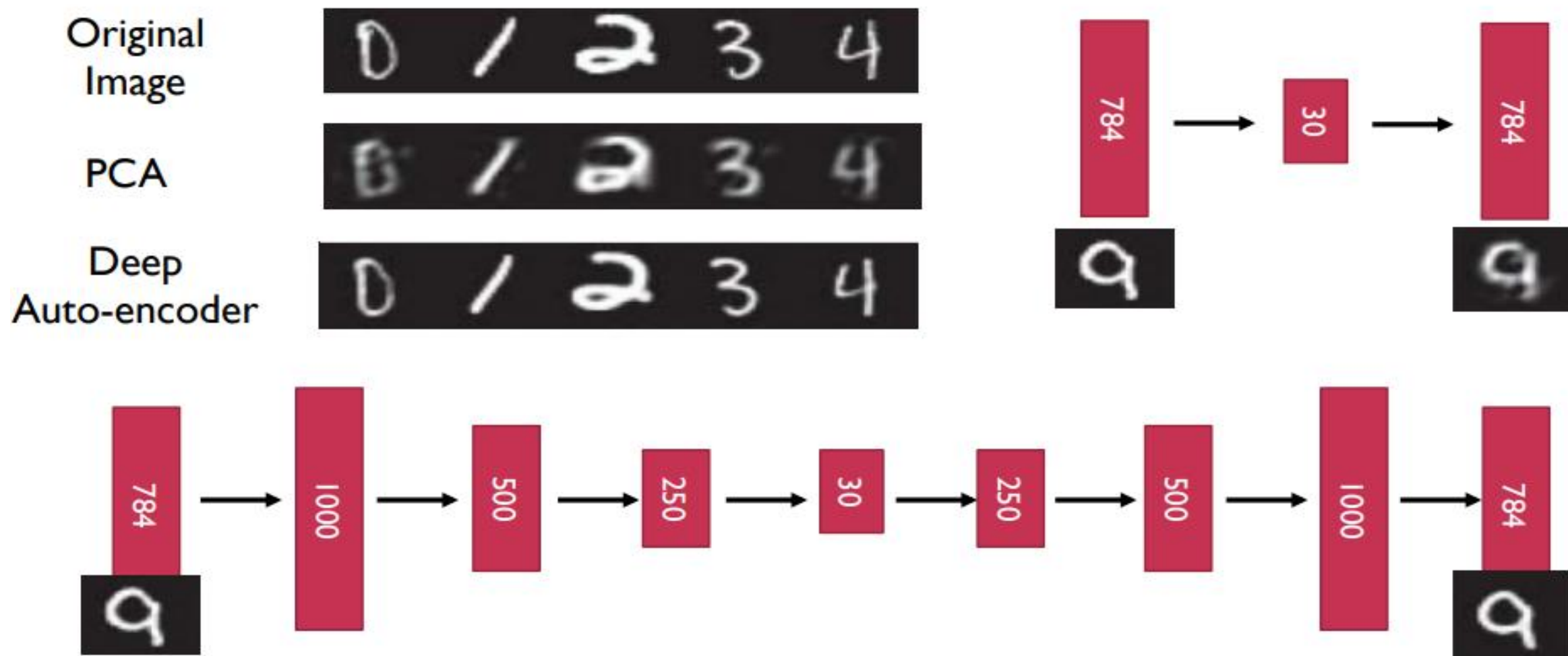


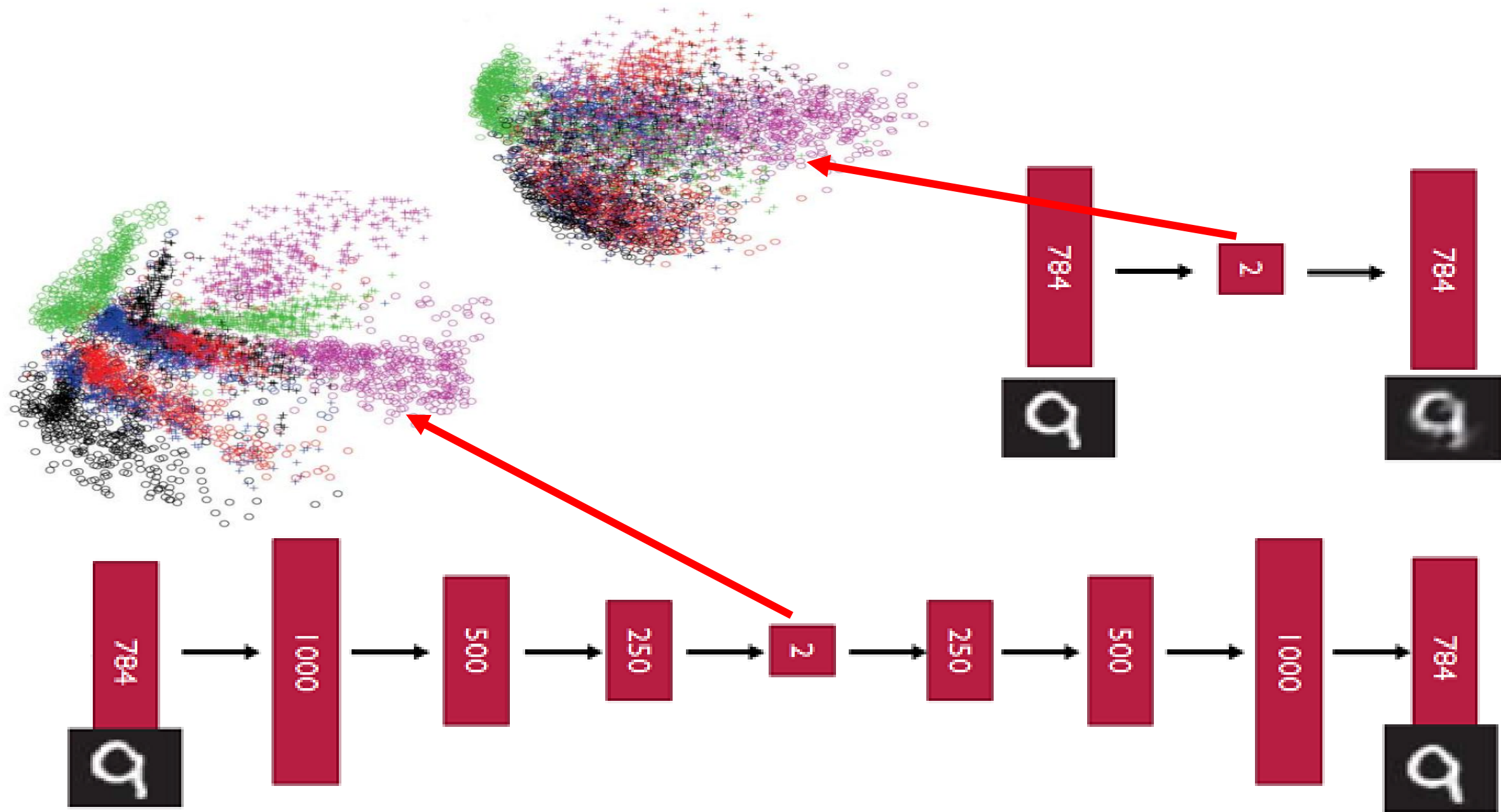
Reference: Hinton, Geoffrey E., and Ruslan R. Salakhutdinov. "Reducing the dimensionality of data with neural networks." *Science* 313.5786 (2006): 504-507

View Points

- Nonlinear PCA (Dimensionality Reduction)
- Unsupervised Learning
- Data compression

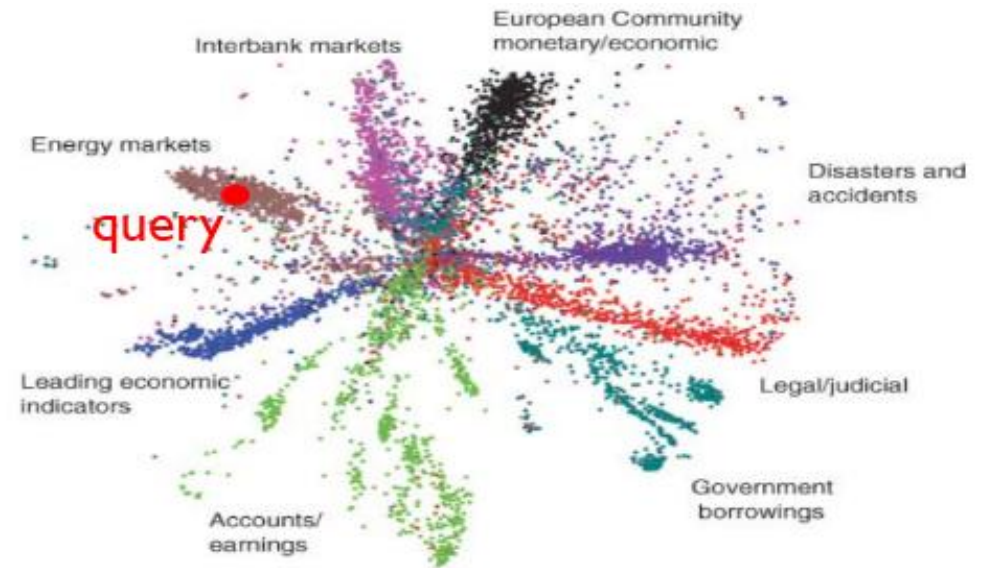
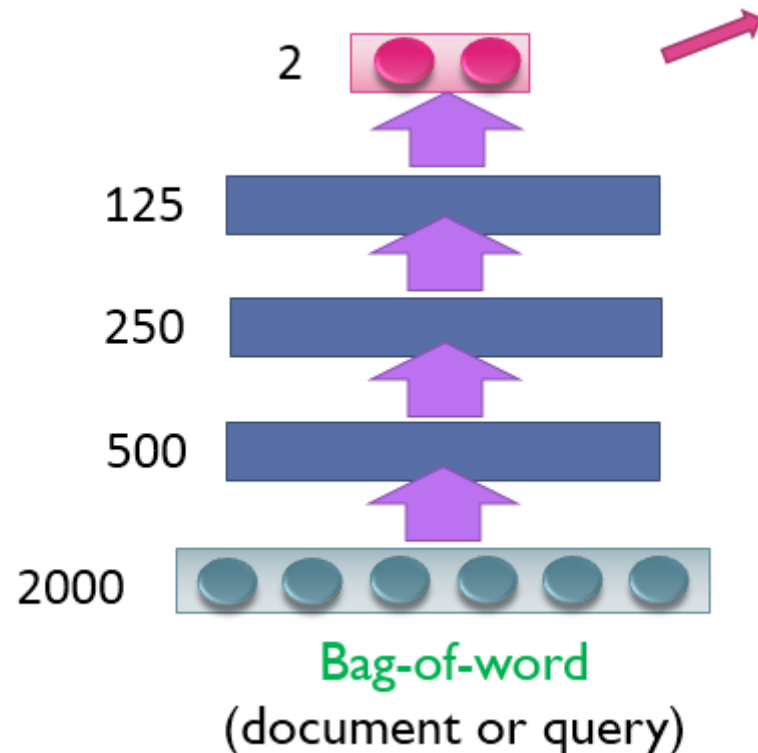
Deep Auto-encoder





Auto-encoder – Text Retrieval

The documents talking about the same thing will have close code.



LSA: project documents to 2 latent topics

Questions?