

Introduction to Deep Learning

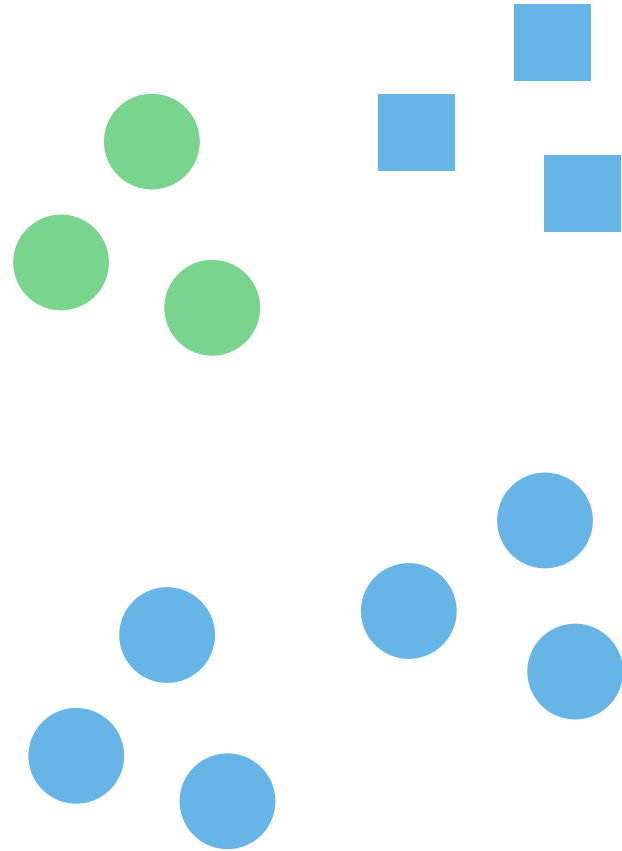
Supervised vs Unsupervised

Supervised learning

- Take (x,y) pairs

Unsupervised learning

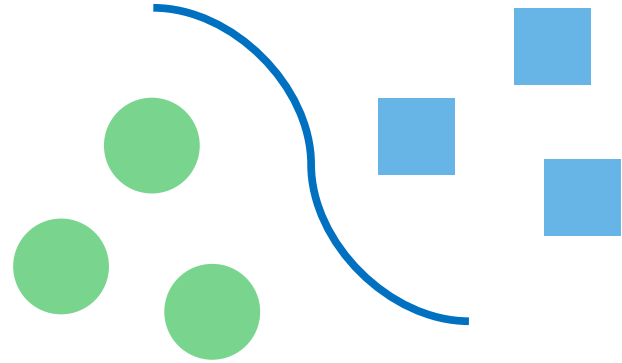
- Take x alone



Supervised vs Unsupervised

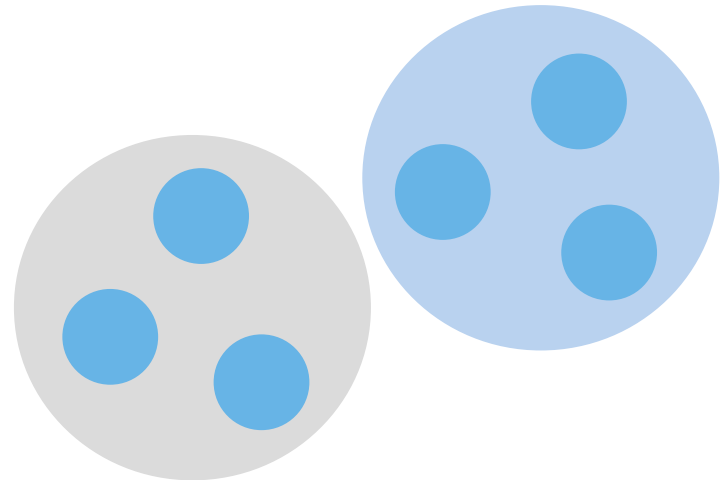
Supervised learning

- Take (x,y) pairs
- Learn mapping $x \rightarrow y$



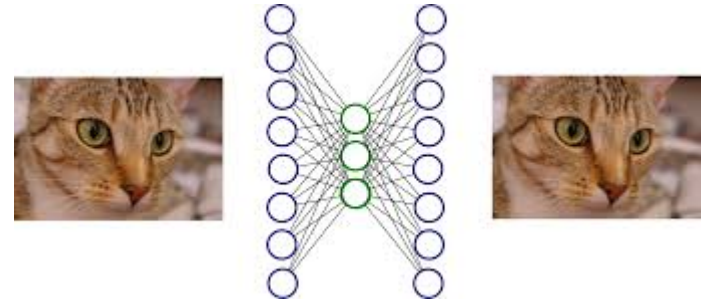
Unsupervised learning

- Take x alone
- Learn hidden structure
- Behind the data



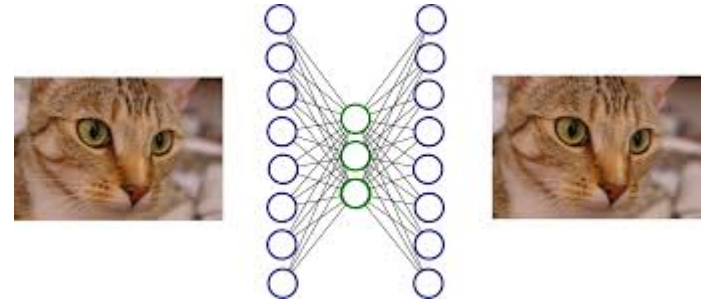
Why bother?

- Find most relevant features
- Compress information



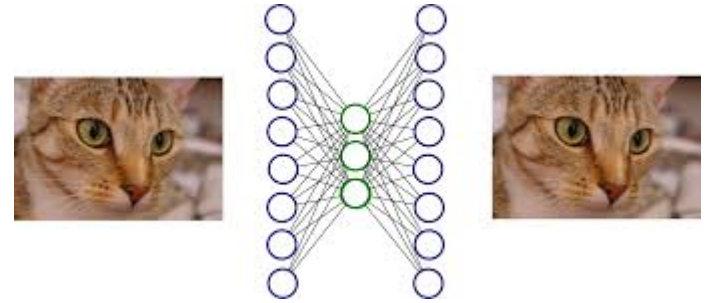
Why bother?

- Find most relevant features
- Compress information
- Retrieve similar objects



Why bother?

- Find most relevant features
- Compress information
- Retrieve similar objects
- Generate new data samples



Why bother?

- Find most relevant features
- Compress information
- Retrieve similar objects
- Generate new data samples
- Explore high-dimensional data

