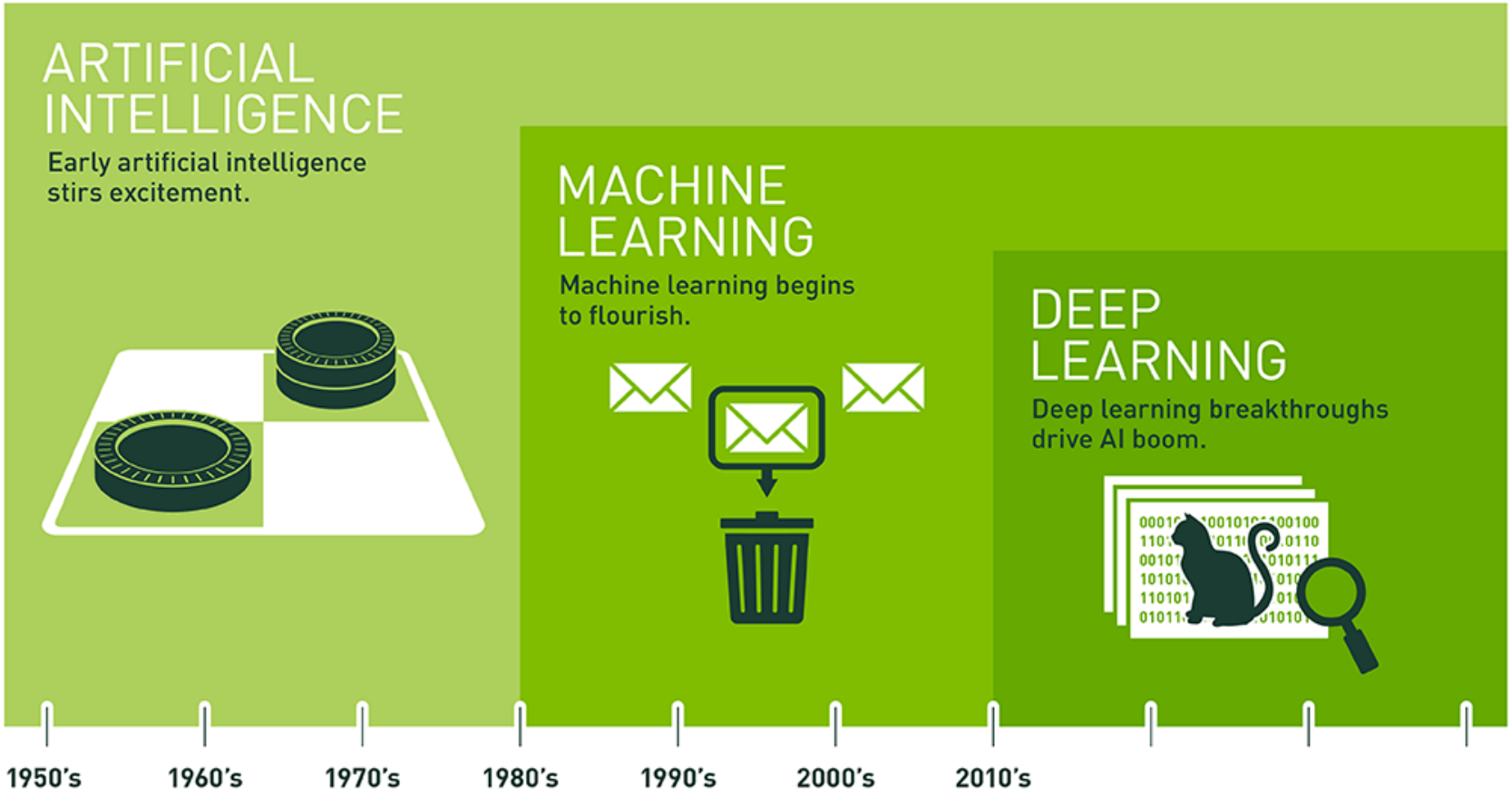
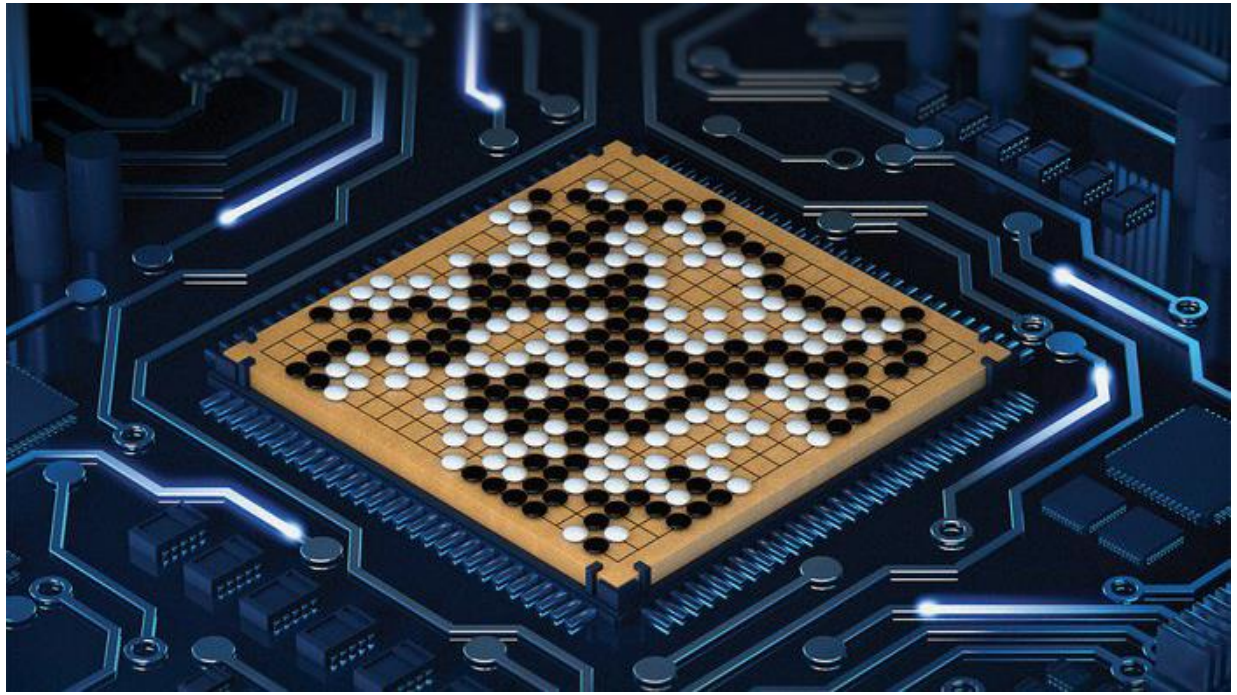
Intoduction to
Artificial Intelligence and Machine Learning

Evolution of Artificial Intelligence

From one single neuron to the deepest architecture



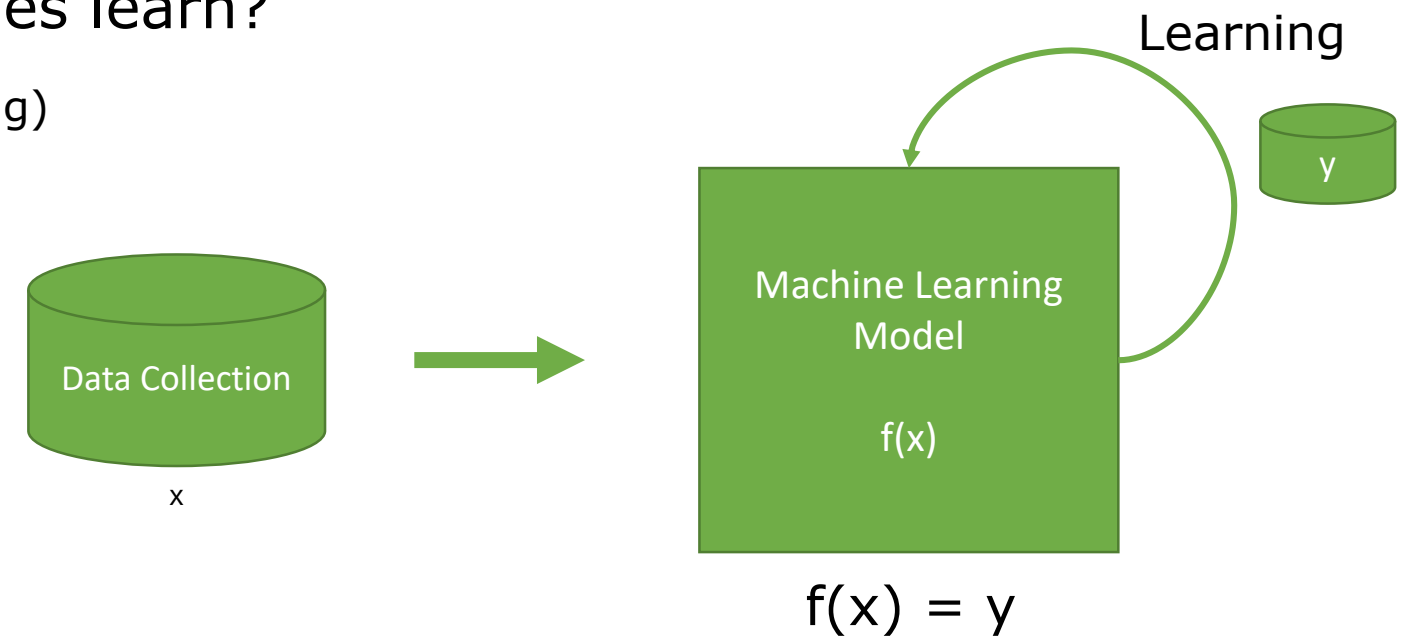
Since an early flush of optimism in the 1950s, smaller subsets of artificial intelligence – first machine learning, then deep learning, a subset of machine learning – have created ever larger disruptions.



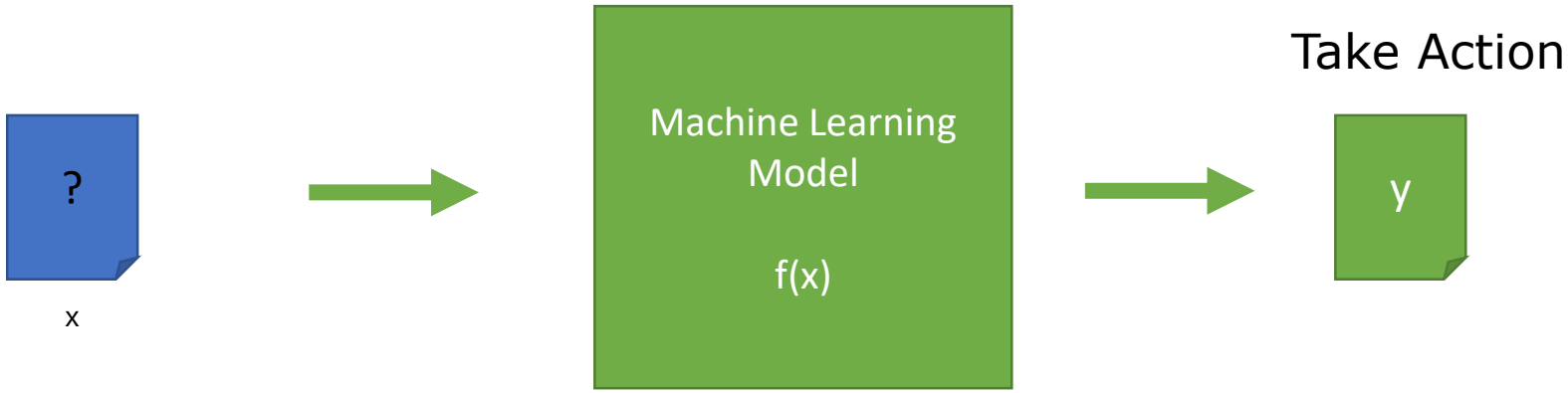

13:33
39 %
What can I help you with?

How machines learn?

Training (Learning)

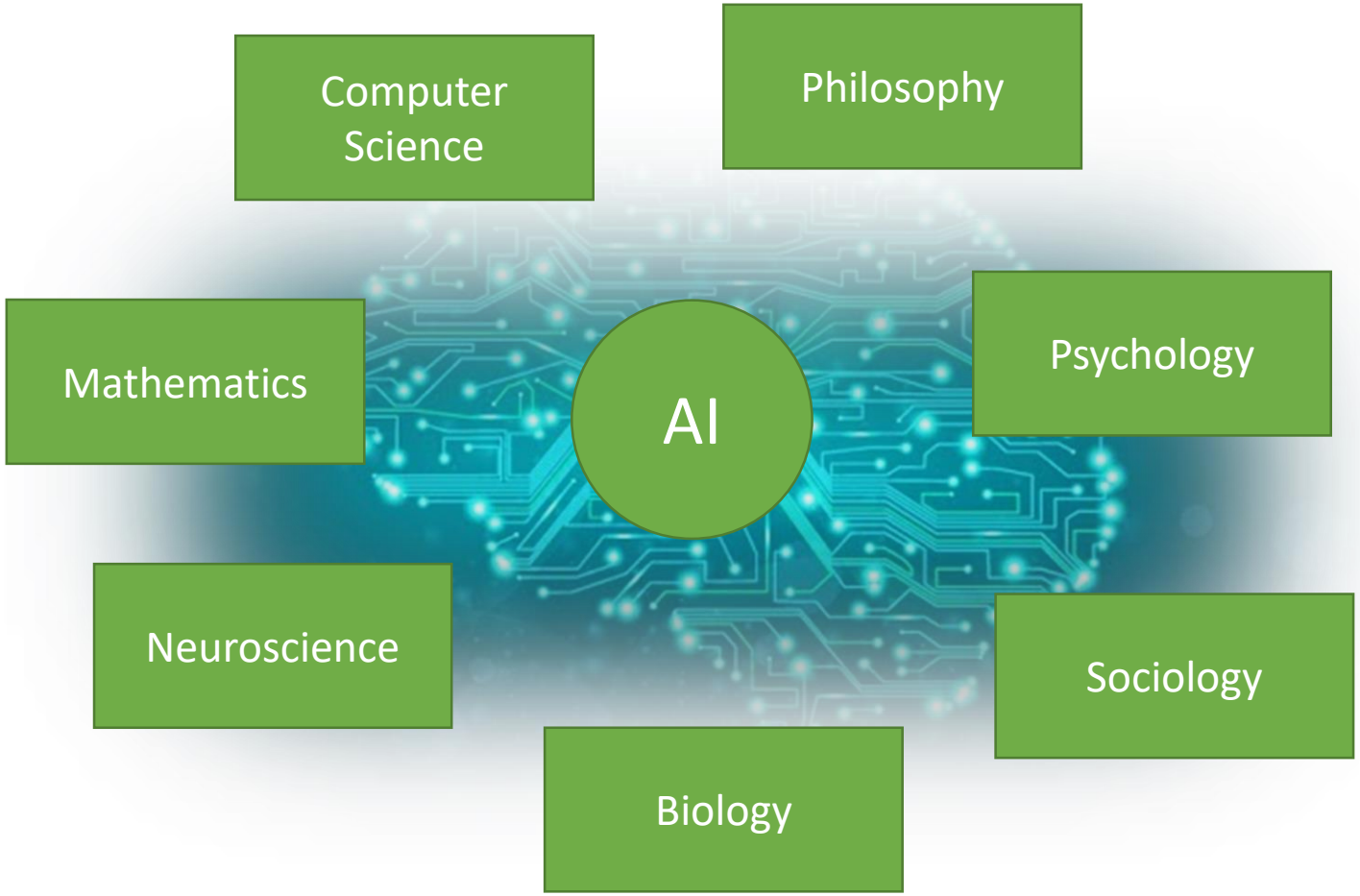


Testing (Inference)



Artificial Intelligence: Intersection of Various Disciplines

AI techniques adapt learning paradigms from different sources



Machine Learning

Use Case 1: Fruit Classification

y = ?

y = Apple

y = Orange

Machine Learning

Use Case 1: Fruit Classification

Training (Learning)

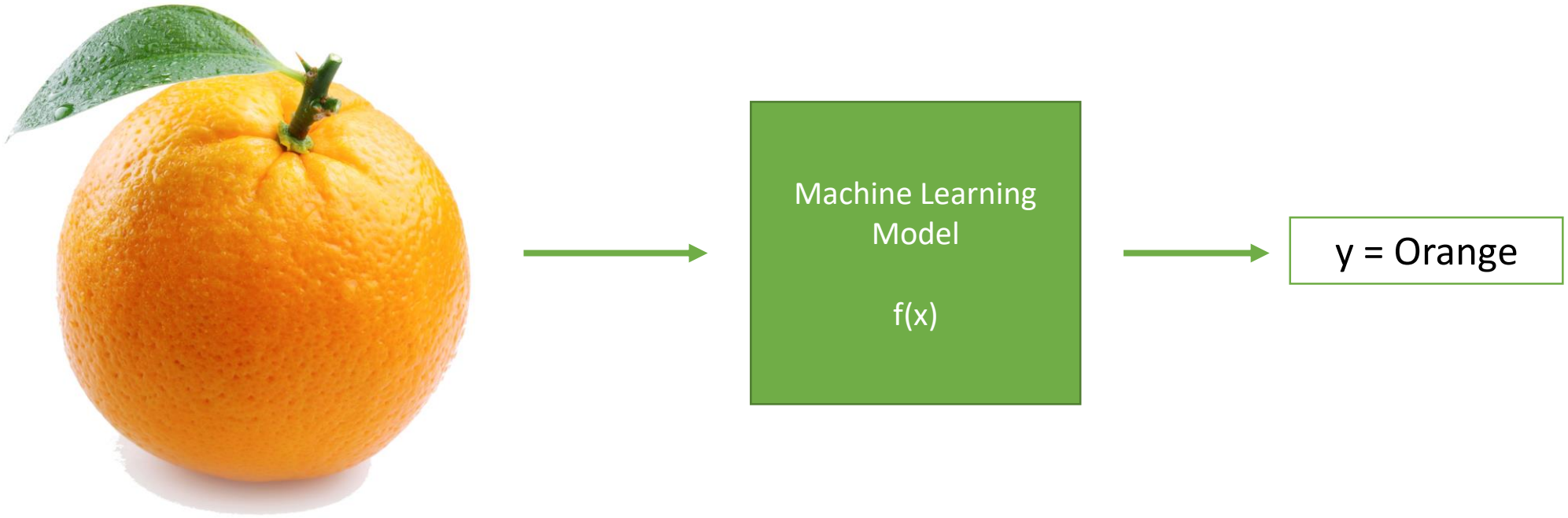
Feature Extraction

Training

Machine Learning

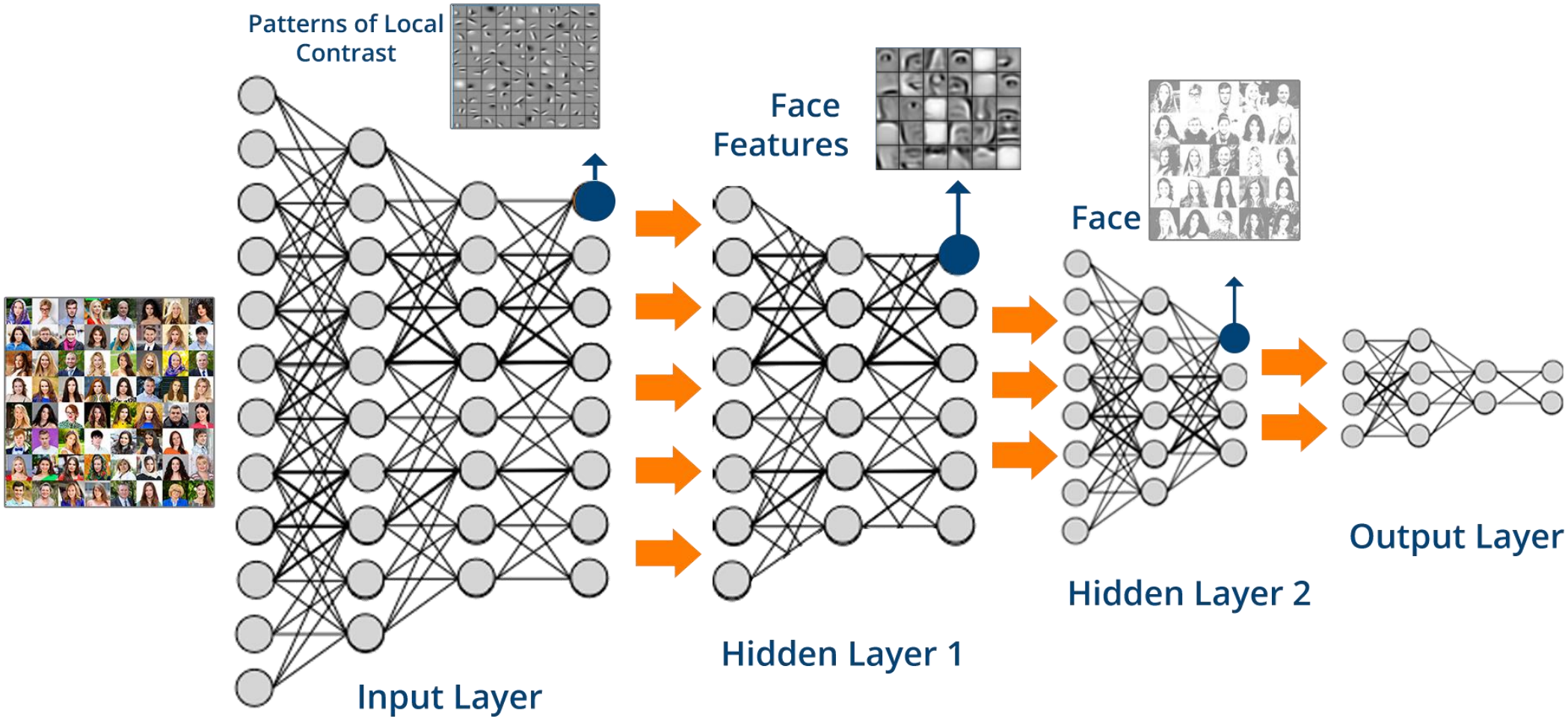
Use Case 1: Fruit Classification

Testing (Inference)



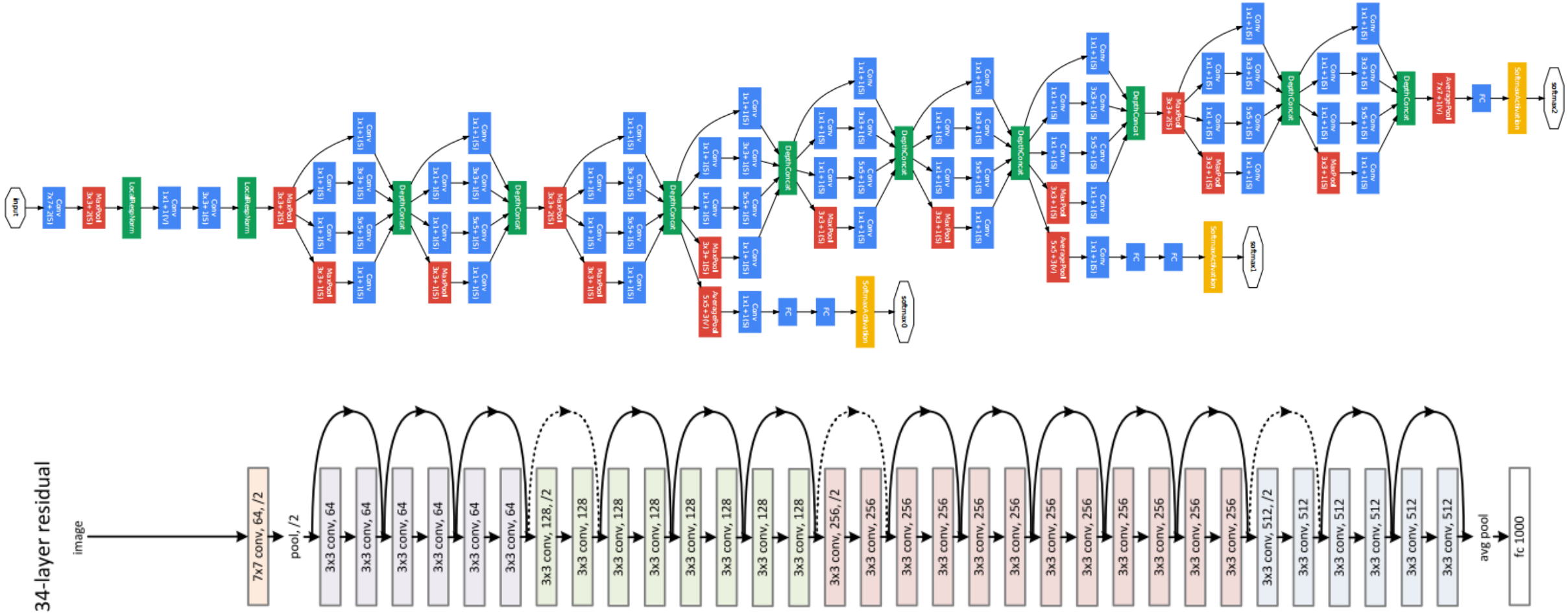
Deep Learning

Size, Color, ?



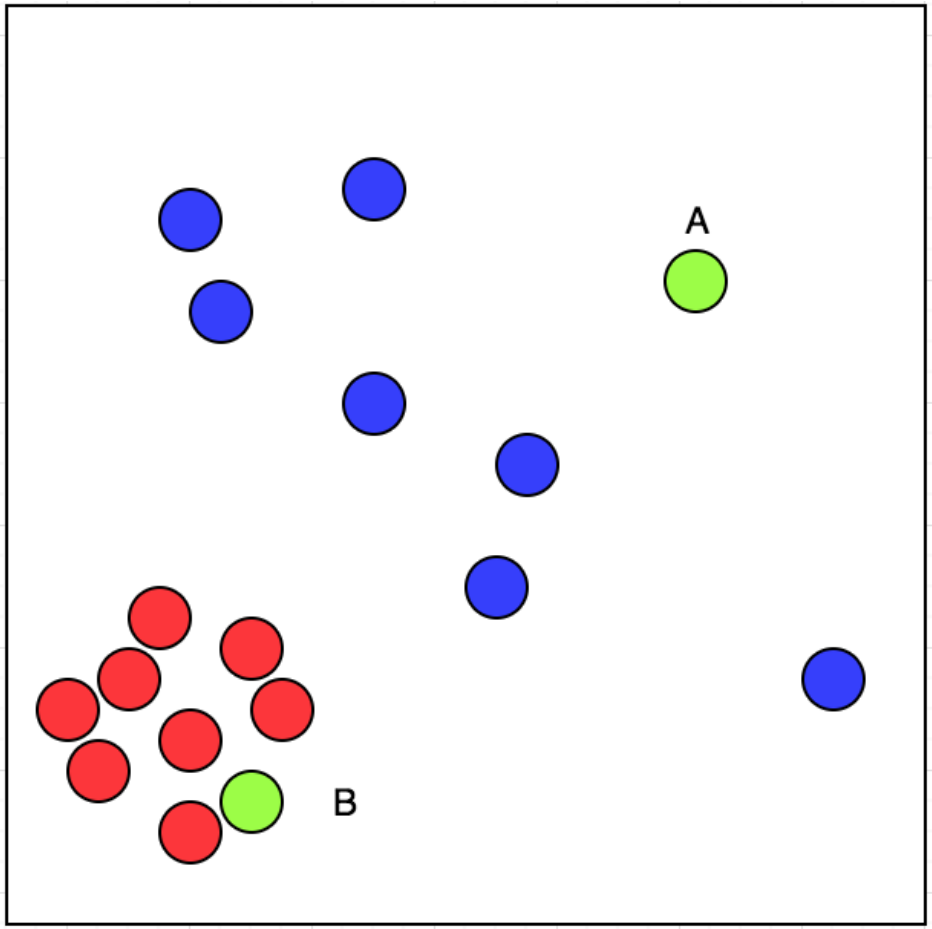
Deep Learning

Even Deeper Networks



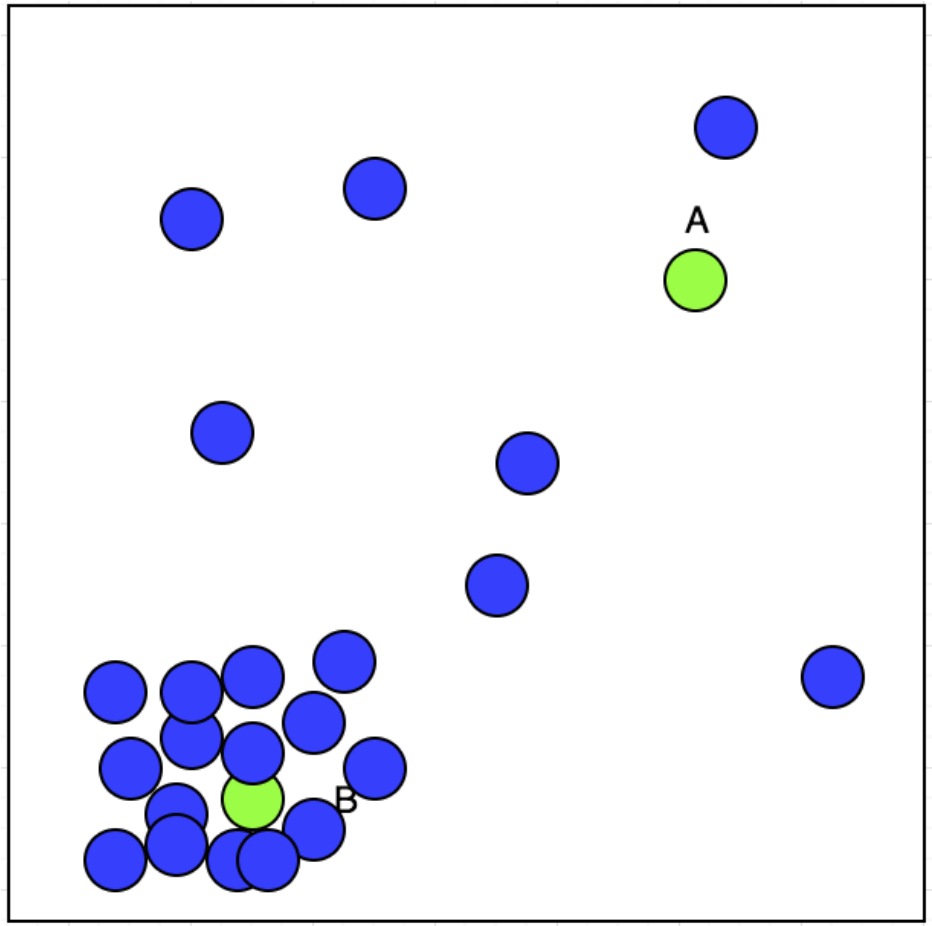
Machine Learning

Supervised Learning – Unsupervised Learning



Supervised Learning

(X, y)

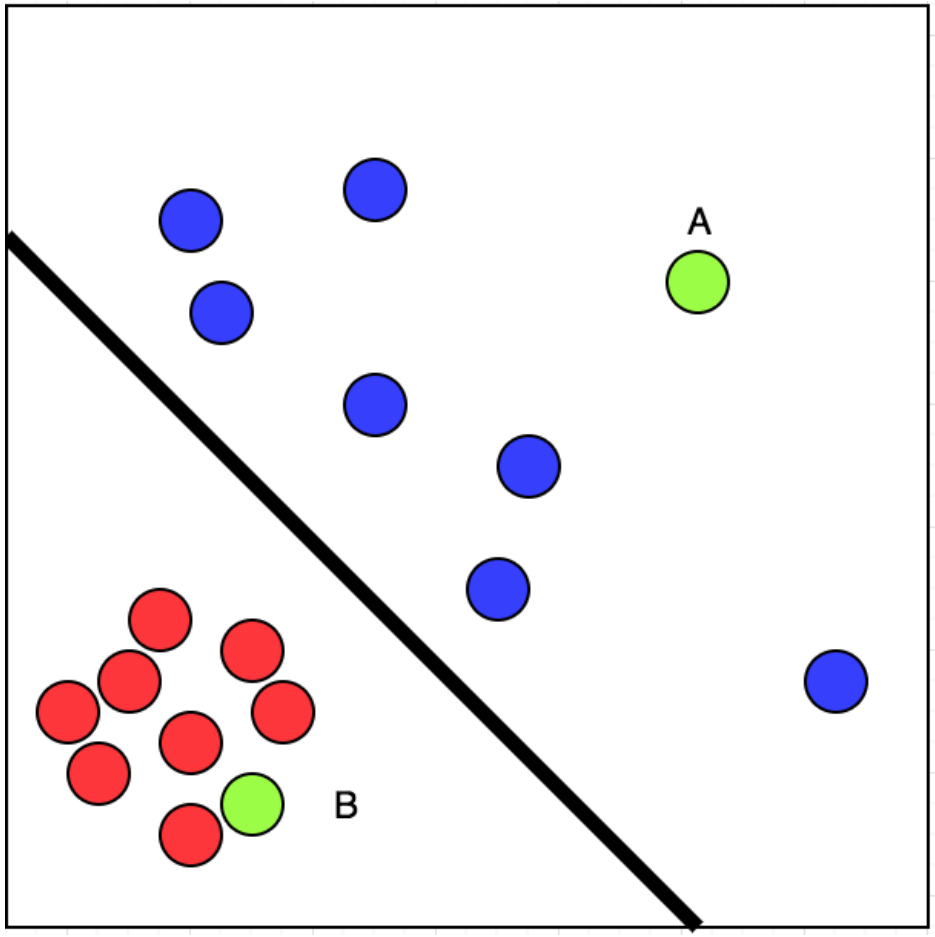


Unsupervised Learning

(X)

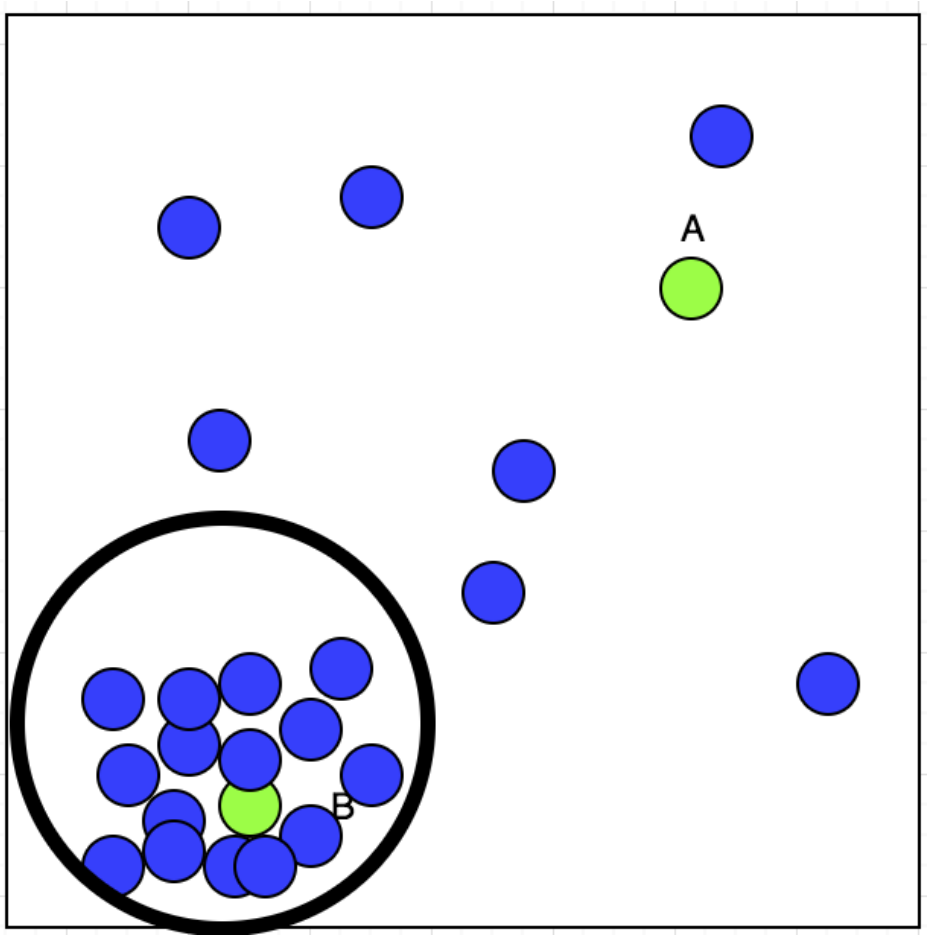
Machine Learning

Supervised Learning – Unsupervised Learning



Supervised Learning

(X, y)



Unsupervised Learning

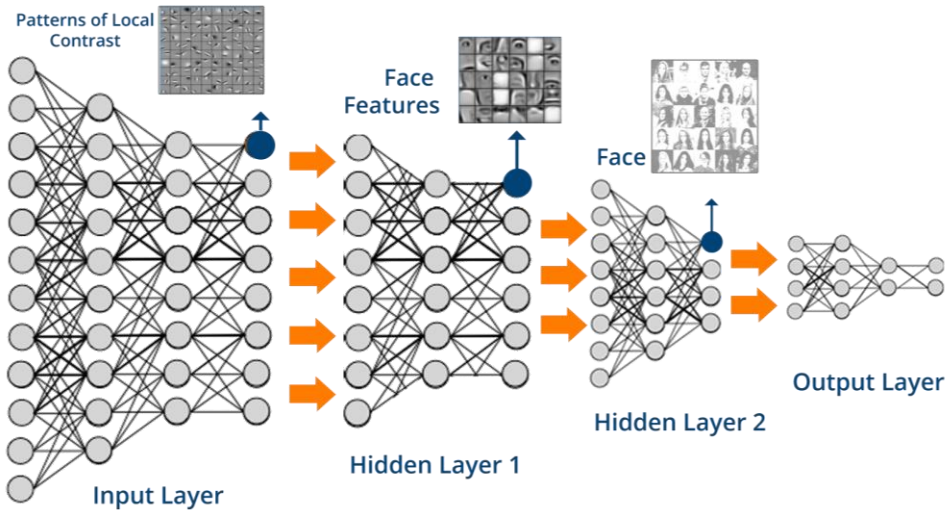
(X)

Deep Learning

Use Case 2: Style Classification

Deep Learning

Use Case 2: Style Classification



y = Work

- Category
- Color
- Pattern
- Style
- Trend
- Season
- Size
- Brand
- Price

Machine Learning Model

f(x)

y = Work