

Kunstig intelligens

Kunstig intelligens

Introduksjon til KI

Kort historie

Hva er det?

Hva er det ikke?

Hva kan vi bruke det til?

Moral og etikk

Myter og misforståelser

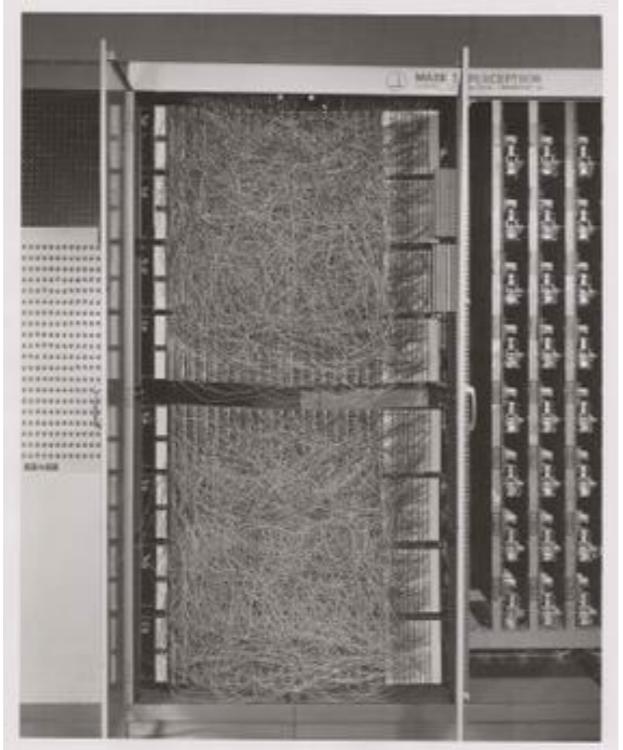
The Analytical Engine has no pretensions whatever to originate anything.

It can do whatever we know how to order it to perform.

It can follow analysis; but it has no power of anticipating any analytical relations or truths.

Its province is to assist us in making available what we are already acquainted with.

Ada Lovelace - Sketch of the Analytical Engine (1843)



1950

1960

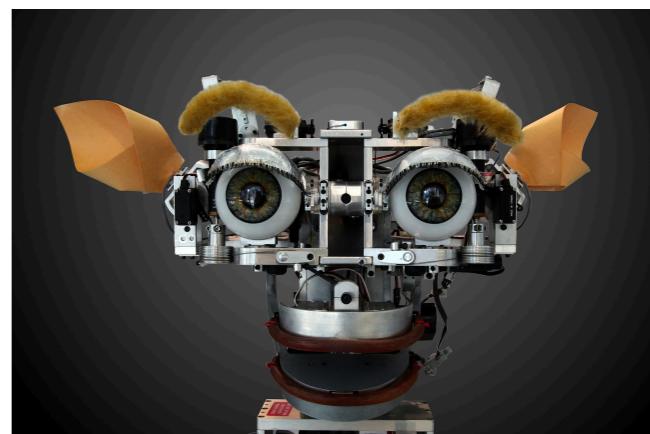
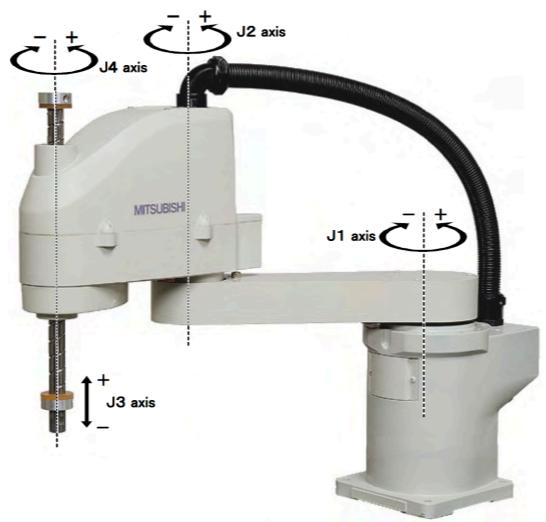
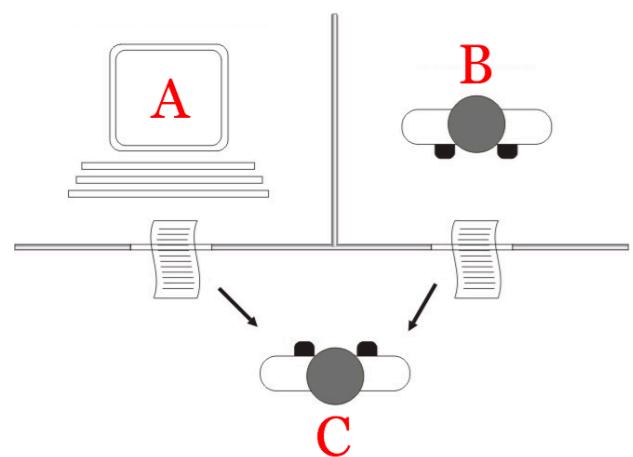
1970

1980

1990

2000

jabberwacky: I've been waiting here for someone to talk to.
user: Dude, you talk to people all the time.
jabberwacky: How many people are you talking with?
user: No one. I'm talking to a robot.
jabberwacky: No, you're not. Although some people think I would never pass the Turing test.
user: You are not a robot?
jabberwacky: Do you think I'm a robot?
user: Yes.
jabberwacky: Well, I guess you caught me then.
user: Ahh.





Hva er KI?

- Kunstig intelligente systemer utfører handlinger, fysisk eller digitalt, basert på tolkning og behandling av strukturerte eller ustrukturerte data, i den hensikt å oppnå et gitt mål. Enkelte KI-systemer kan også tilpasse seg gjennom å analysere og ta hensyn til hvordan tidligere handlinger har påvirket omgivelsene.



Maskinlæring

- Spørsmål: Hva er maskinlæring?
- Svar: Kunstig intelligente systemer som skal oppnå et mål basert på data.



Data og algoritmer

- Data: verdier eller opplysninger som eksisterer i et bestemt dataformat.
- Algoritme: en oppskrift for hva en datamaskin skal gjøre i en bestemt situasjon.



Hva er ikke KI?



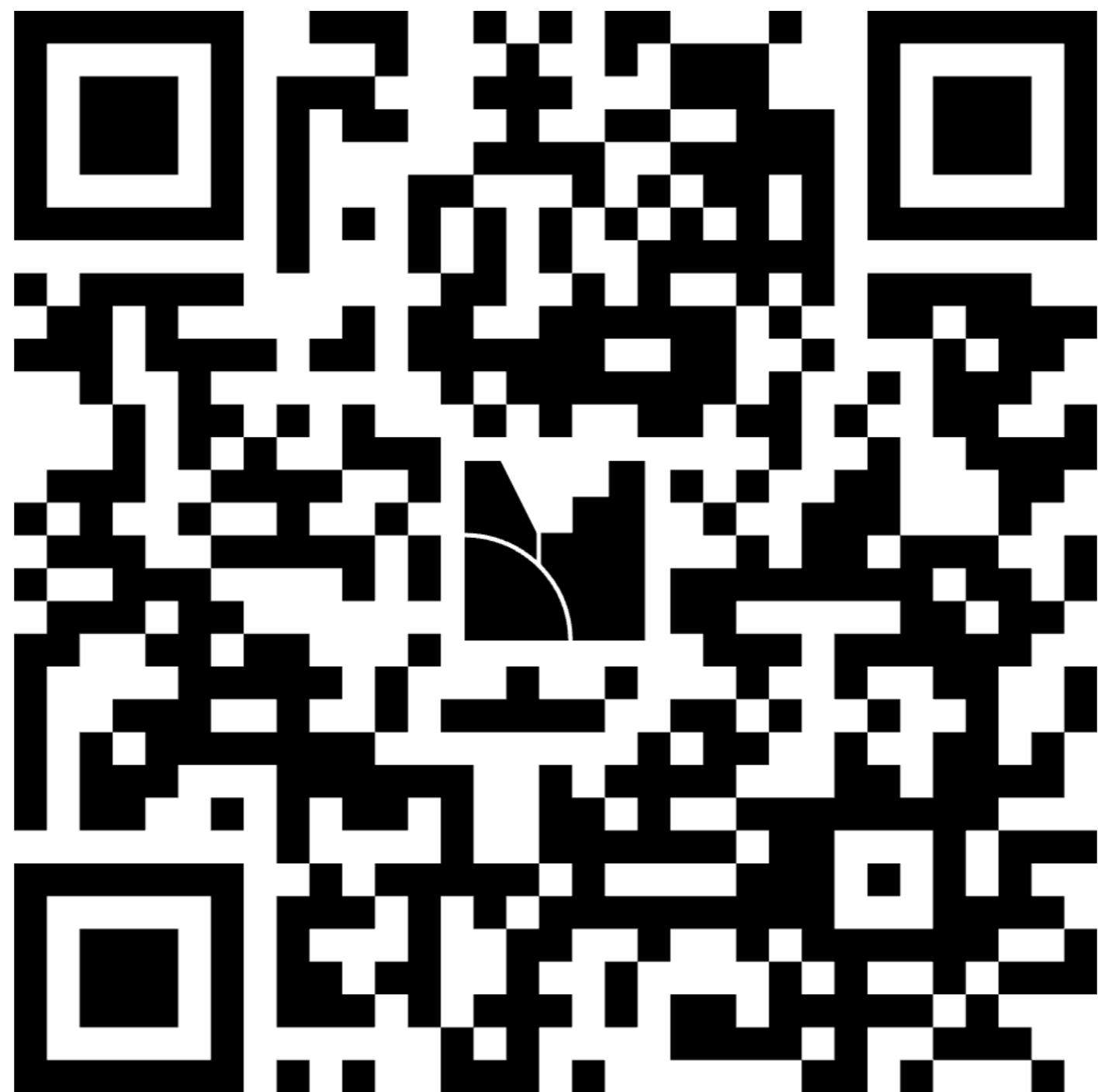
Moral og etikk

- Hva er mulig (teknologi)?
- Hva er greit (etikk)?
- Hva er lov (juss)?



Myter og misforståelser

- Hverken kunstig eller intelligent.
- KI er ute etter jobben min.



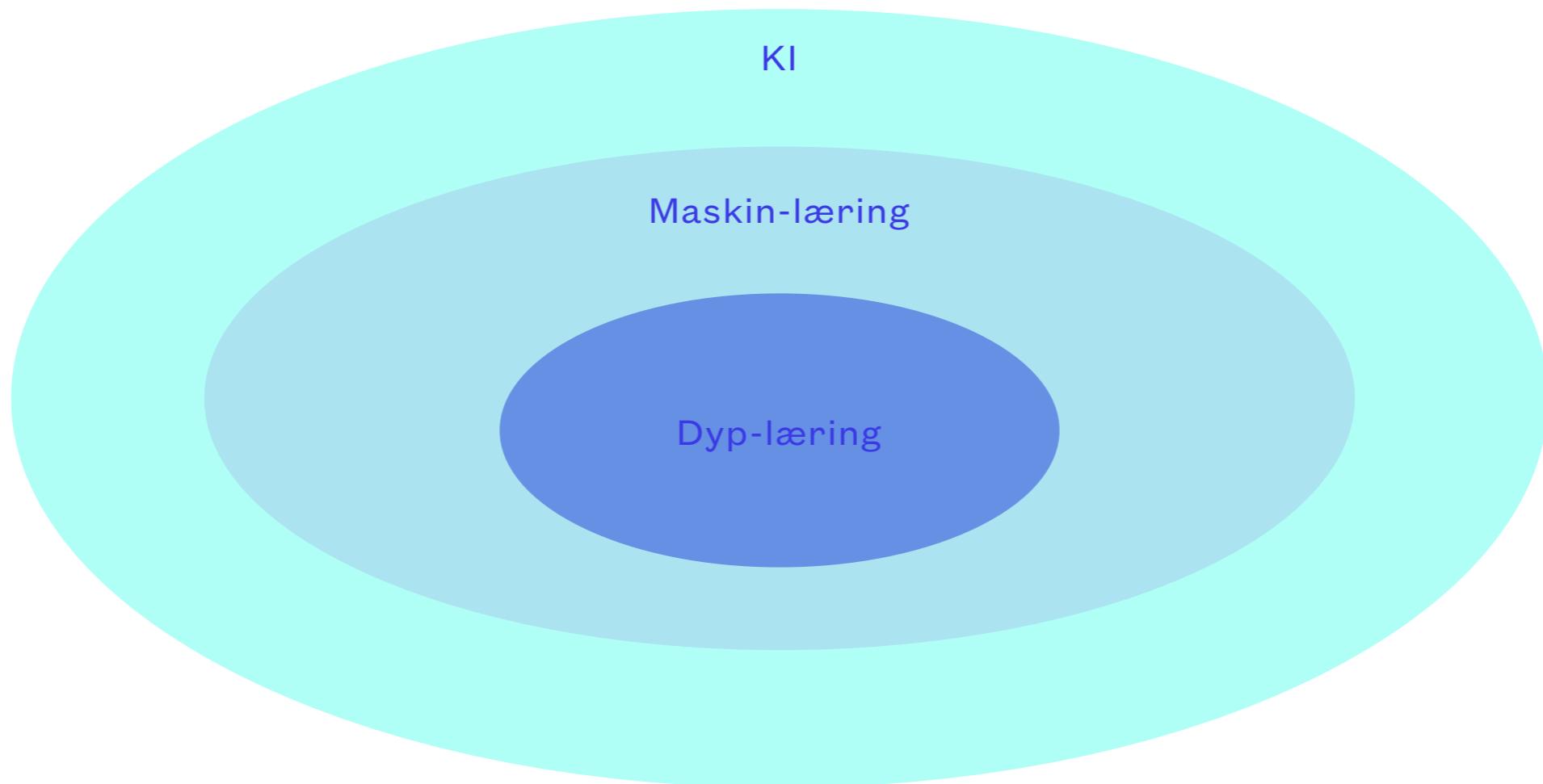
Introduksjon til ML

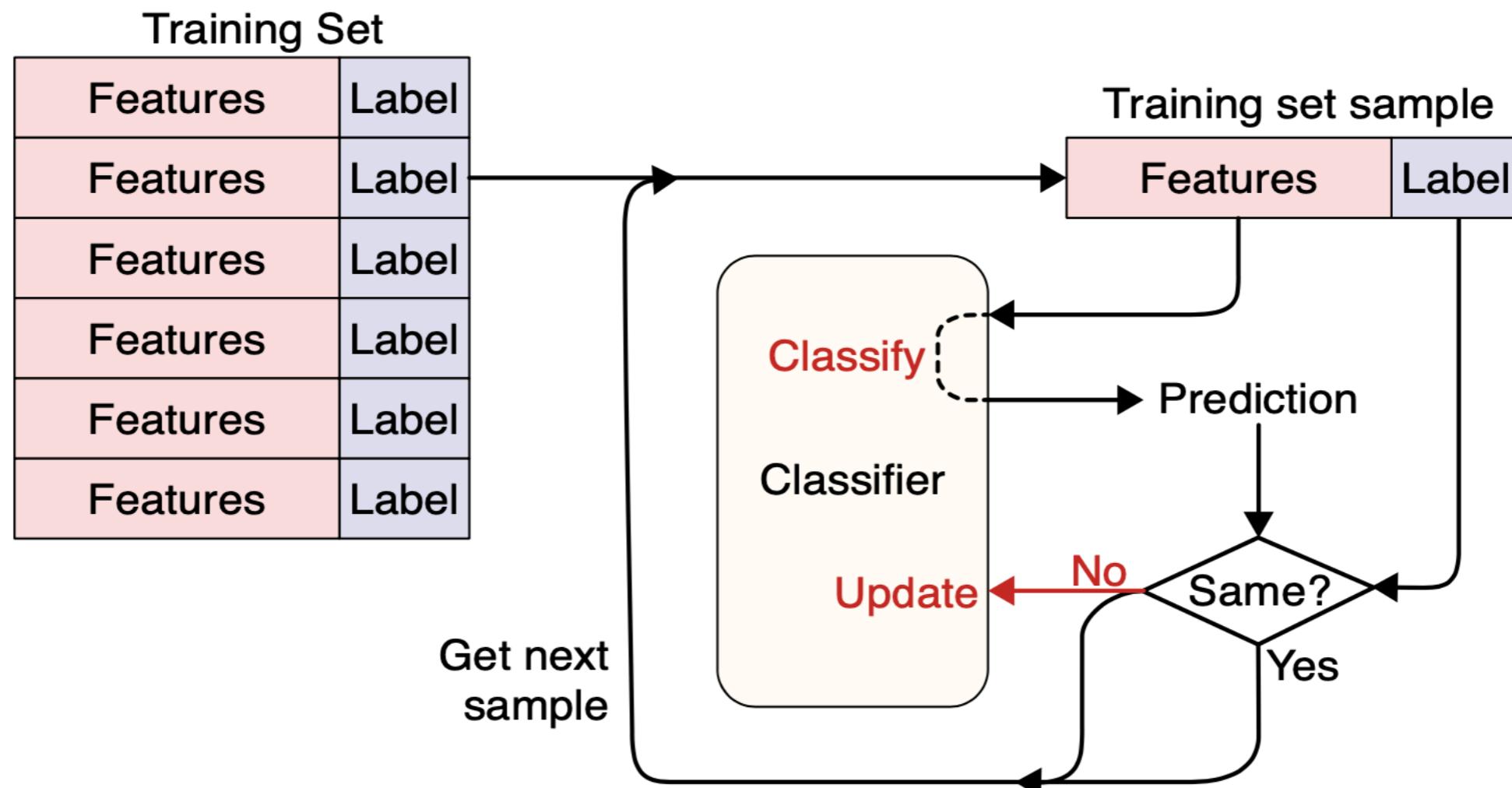
Hva er det?

Hva og hvordan lærer maskinen?

Veiledet læring

Begreper





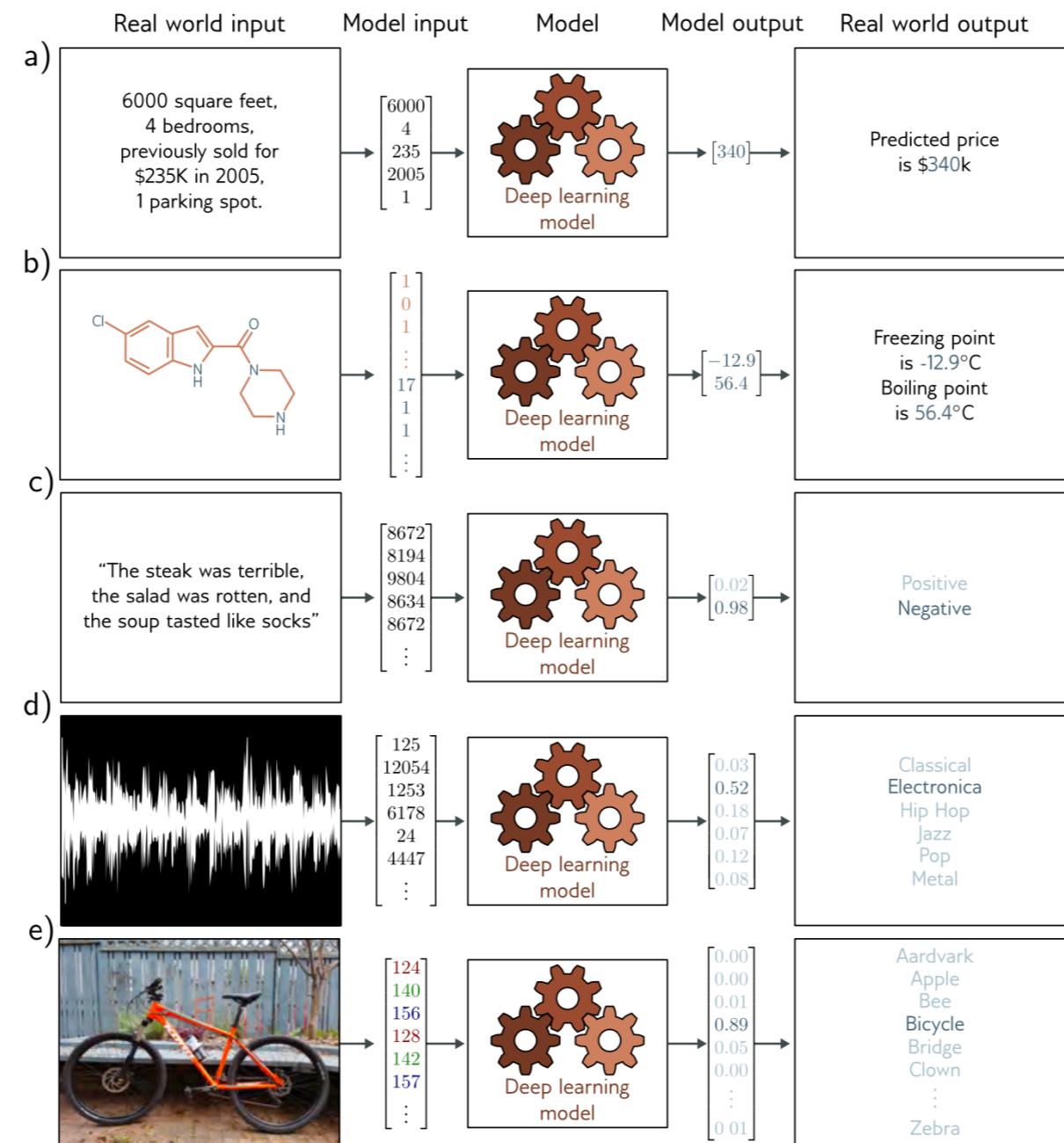


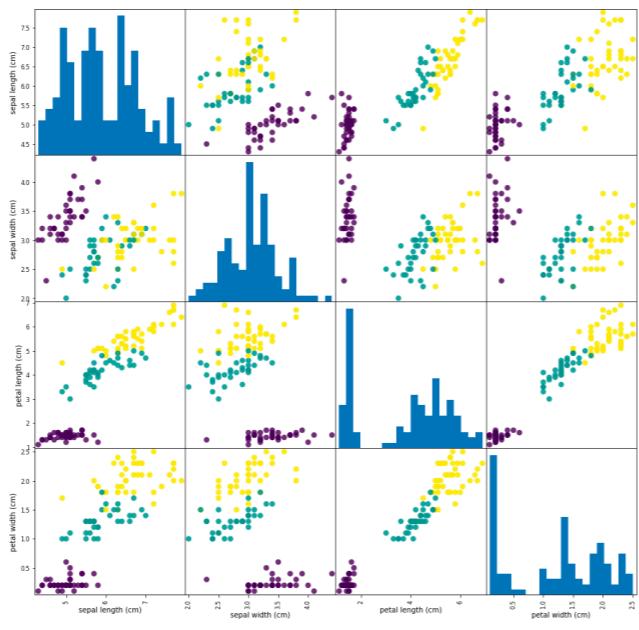
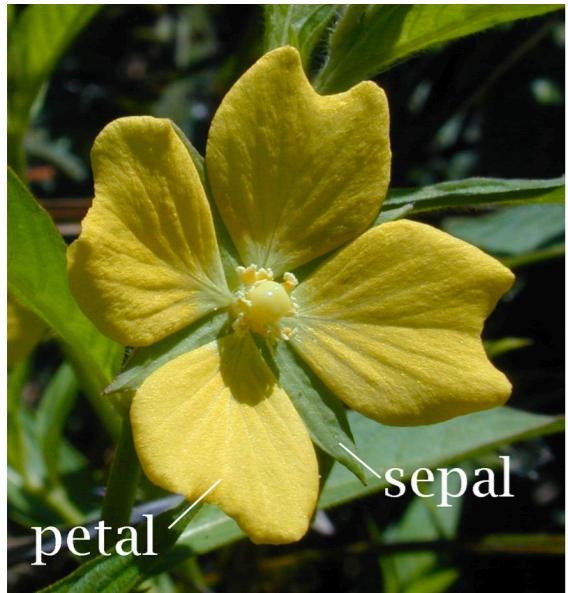
Figure 1.2 Regression and classification problems. a) This *regression* model takes a vector of numbers that characterize a property and predicts its price. b) This *multivariate regression* model takes the structure of a chemical molecule and predicts its melting and boiling points. c) This *binary classification* model takes a restaurant review and classifies it as either positive or negative. d) This *multiclass classification* problem assigns a snippet of audio to one of N genres. e) A second multiclass classification problem in which the model classifies an image according to which of N possible objects it might contain.

```

import pandas as pd
from sklearn.datasets import load_iris
# Load the dataset and convert to DataFrame for viewing.
iris_data = load_iris()
iris_data_df = pd.DataFrame(iris_data.data, columns=iris_data.feature_names)
# View 5 first vectors of the DataFrame.
iris_data_df.head()

```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2



Iris setosa



Iris versicolor



Iris virginica



TensorFlow

Noen algoritmer

Linear regression

K-means clustering

Multi-Layer Perceptron

K-nearest-neighbors



pandas

NumPy 



GeoPandas



matplotlib

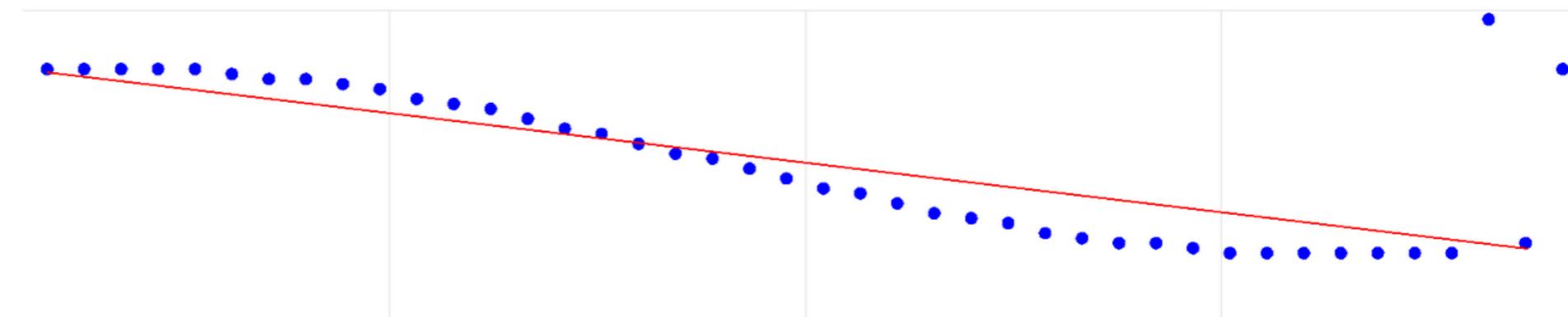
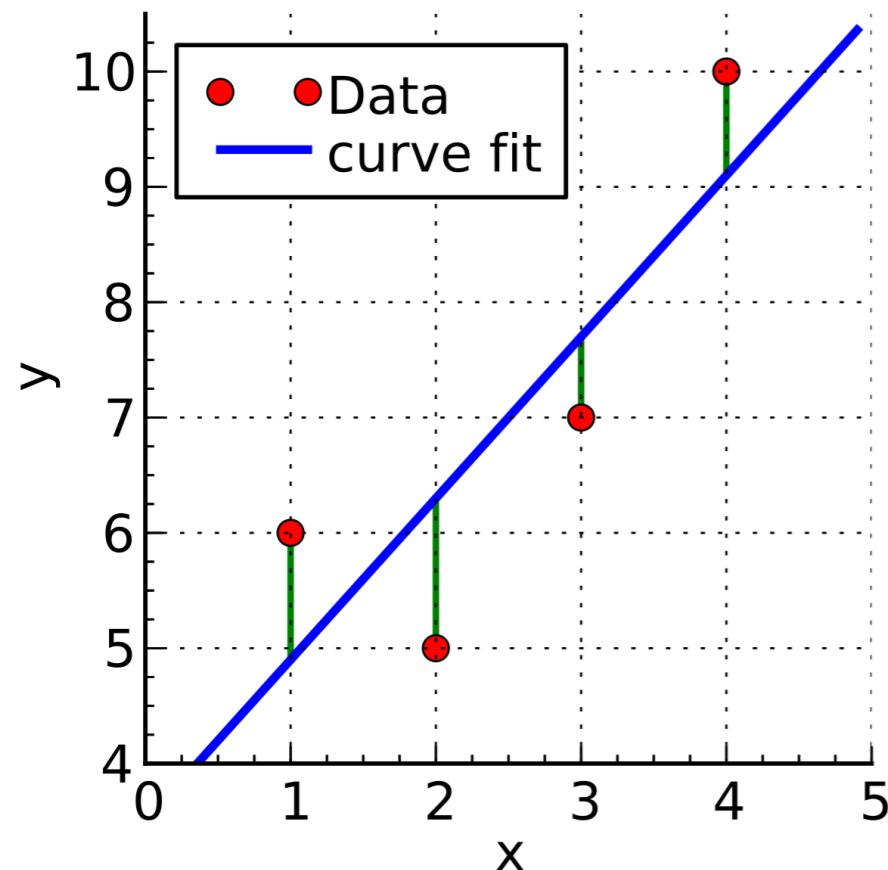


seaborn

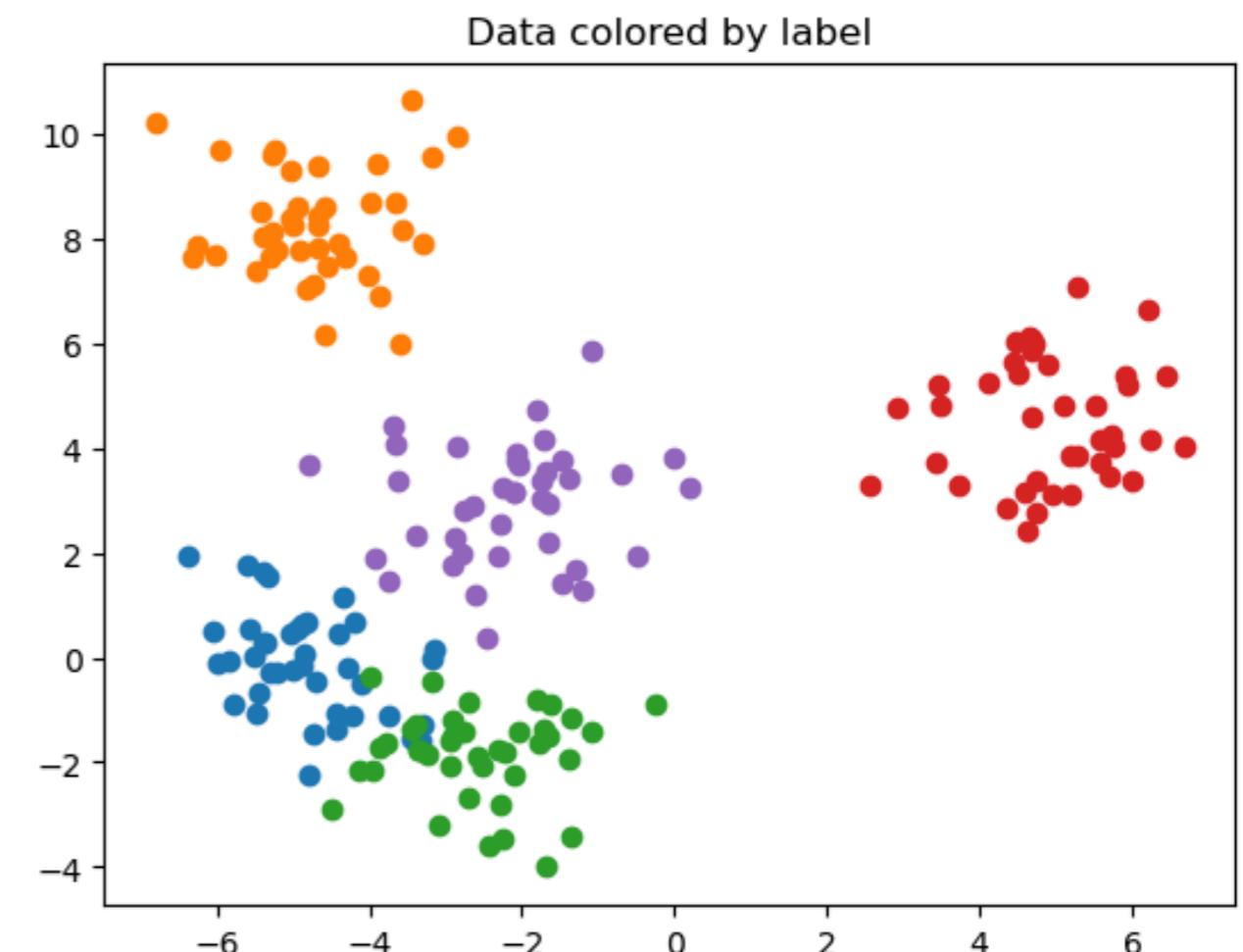
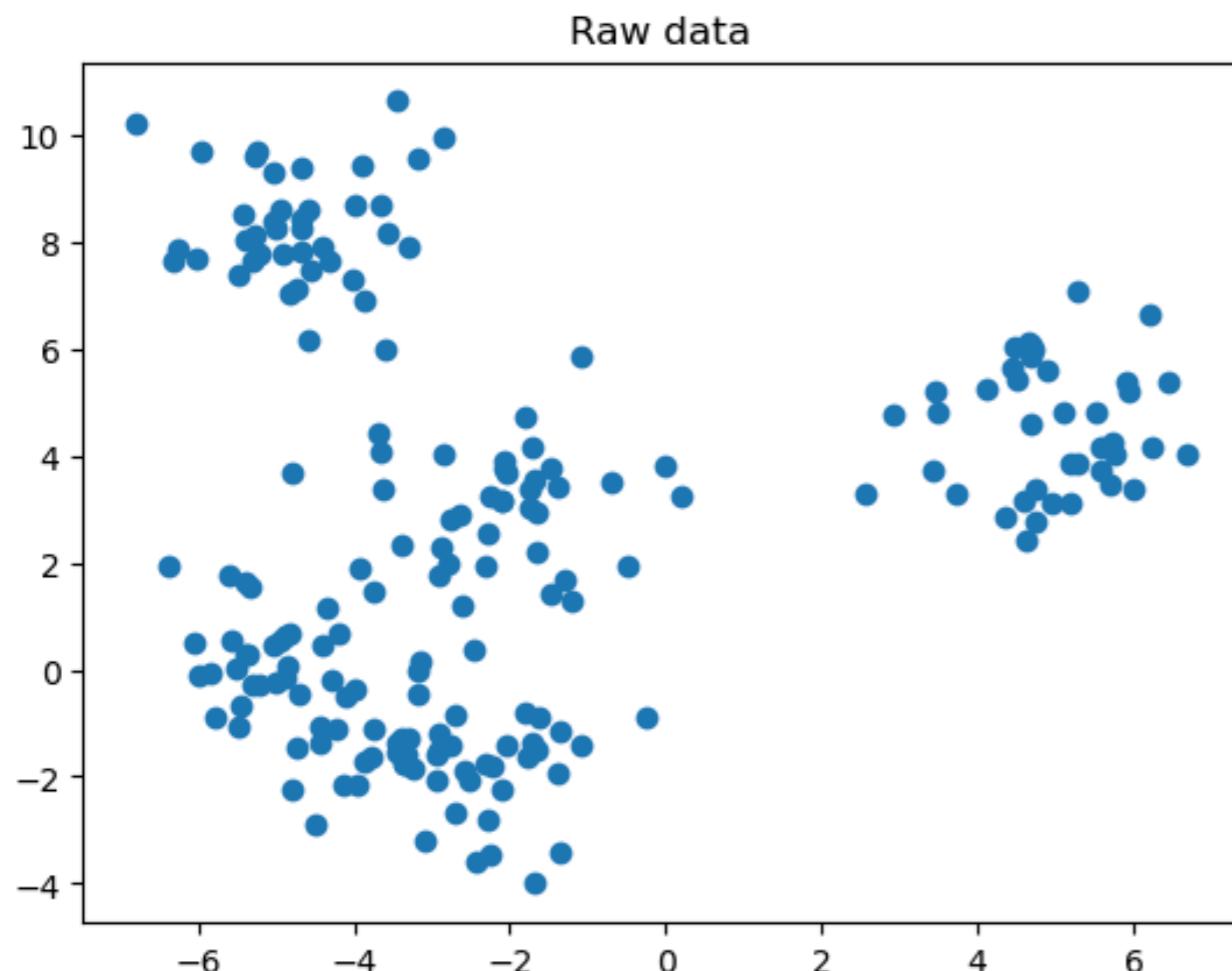


scikit
learn

Linear regression



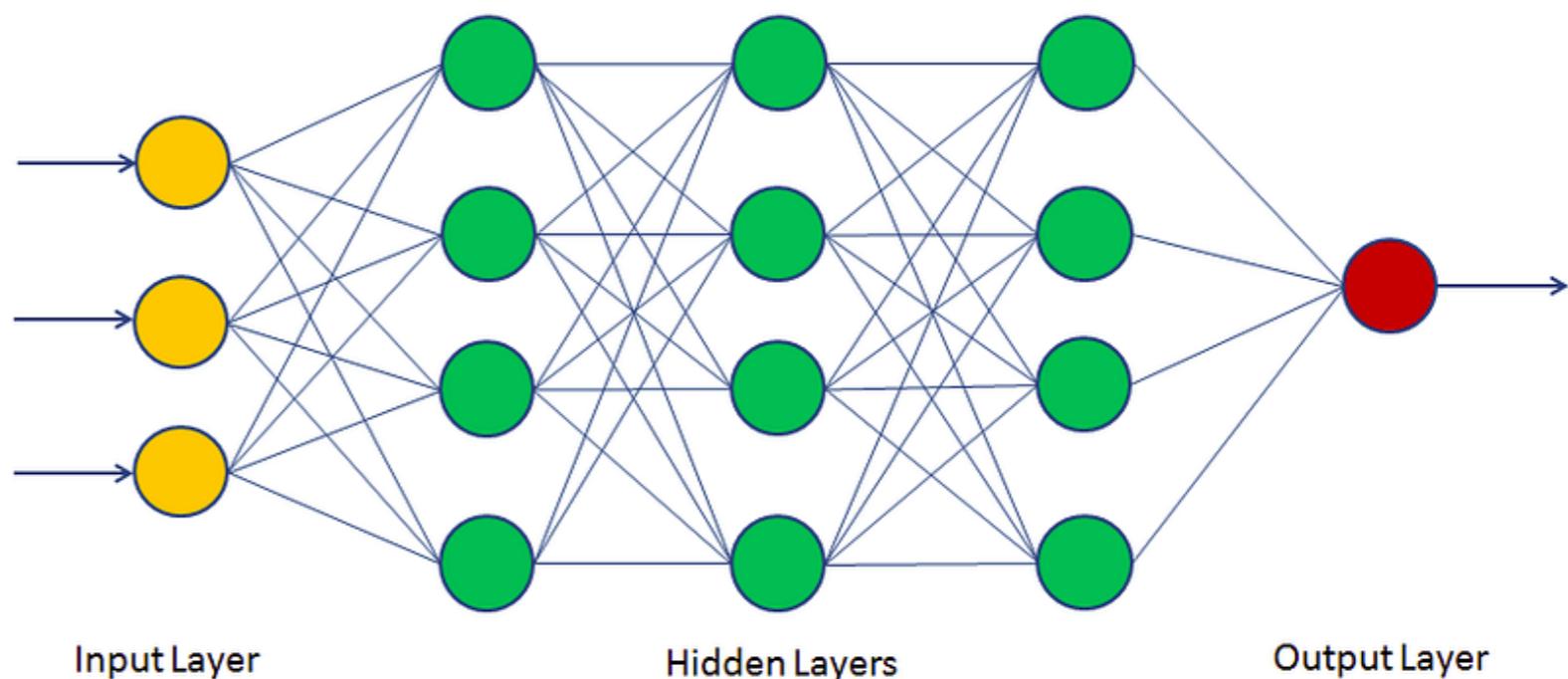
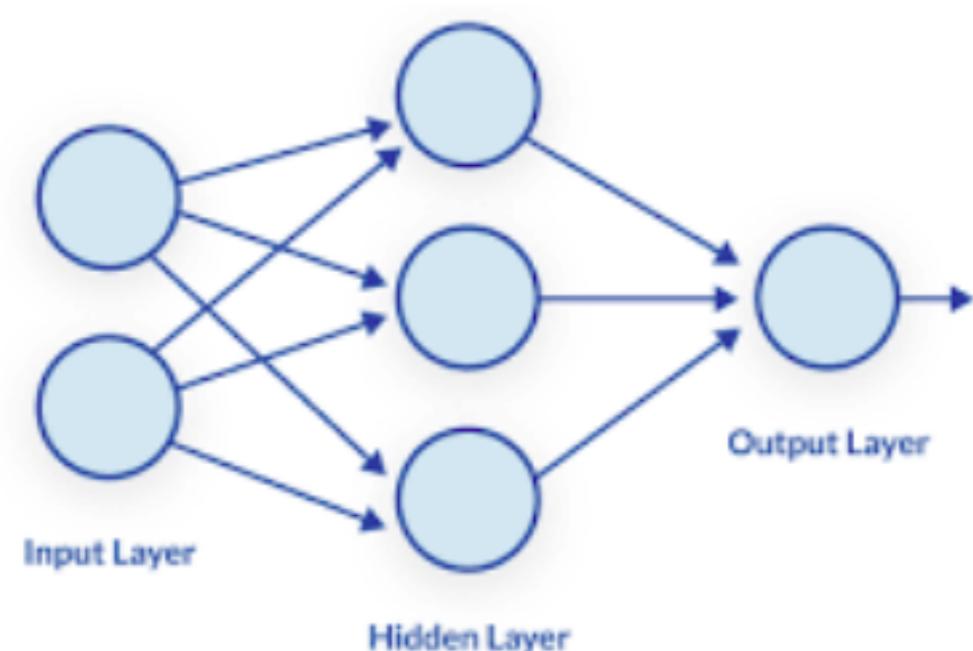
***k*-means clustering**



k-means clustering

- 1: Spesifisert antall cluster (k)
 - 2: Initialiser k centroids
 - 3: gjenta:
 - 4: Forventing - Tildel kvart punkt til den næreste centroiden.
 - 5: Maksimer - Beregn ny centroid (mean) for hvert cluster.
 - 6: fremtil: centroidene sin plassering ikke endrer seg.
-

Multi-Layer Perceptron



k-nearest-neighbors

