Where are we?

Artificial Intelligence (AI), Machine Learning (ML) , (Artificial) Neural Networks ((A)NN), Deep Learning (DL)
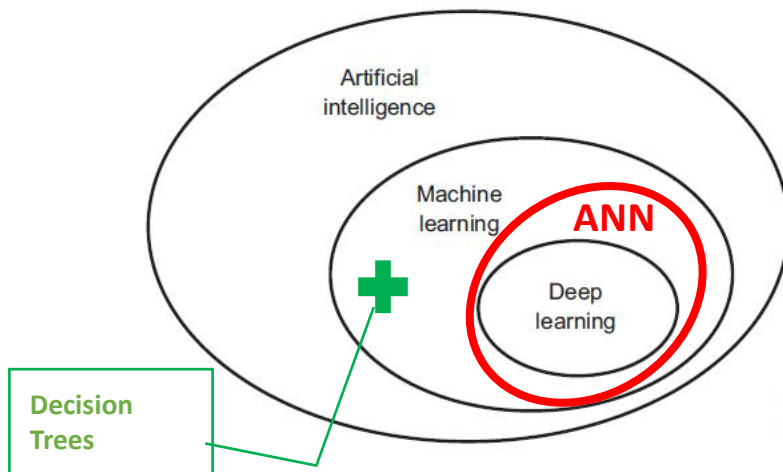

Artificial intelligence

Machine learning

ANN

Deep learning

Decision Trees

Figure 1.1   Artificial intelligence, machine learning, and deep learning

EXAMPLES OF **TASKS** FOR A NEURAL NETWORK (MACHINE LEARNING SYSTEM)	
CLASSIFICATION	REGRESSION
Apple/Banana Sorter Result is CLASS	**"Automated weight assessment"**
3 Prototype Vectors Measurement Vector $\mathbf{p} = \begin{bmatrix} shape \\ texture \\ weight \end{bmatrix}$ Prototype Banana $\mathbf{p}_1 = \begin{bmatrix} -1 \\ 1 \\ -1 \end{bmatrix}$ Prototype Apple $\mathbf{p}_2 = \begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix}$ Shape: {1 : round ; -1 : eliptical} Texture: {1 : smooth ; -1 : rough} Weight: {1 : > 1 lb. ; -1 : < 1 lb.}	HEIGHT → WEIGHT LENGTH Result is WEIGHT (a number)