Machine Learning

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Learning From Data

ML in Medicine

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Dermatologist-level classification of skin cancer with deep neural networks

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https://www.nature.com/articles/nature21056

Protein Folding (AlphaFold)

Protein folding explained

https://deepmind.google/discover/blog/alphafold-a-solution-to-a-50-year-old-grand-challenge-in-biology/

3 types of ML

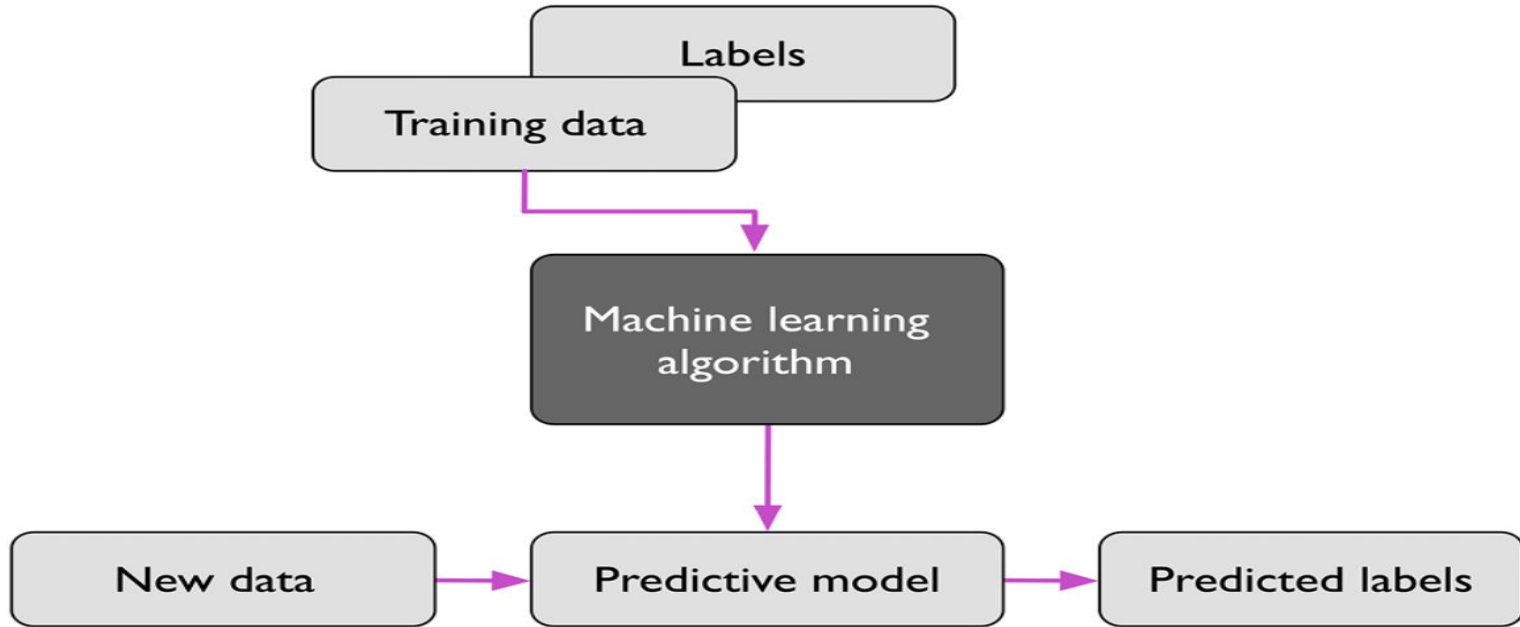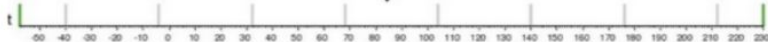| Supervised learning	> Labeled data > Direct feedback > Predict outcome/future
Unsupervised learning	> No labels/targets > No feedback > Find hidden structure in data
Reinforcement learning	> Decision process > Reward system > Learn series of actions

Goal of Supervised Learning

Classification vs. Regression
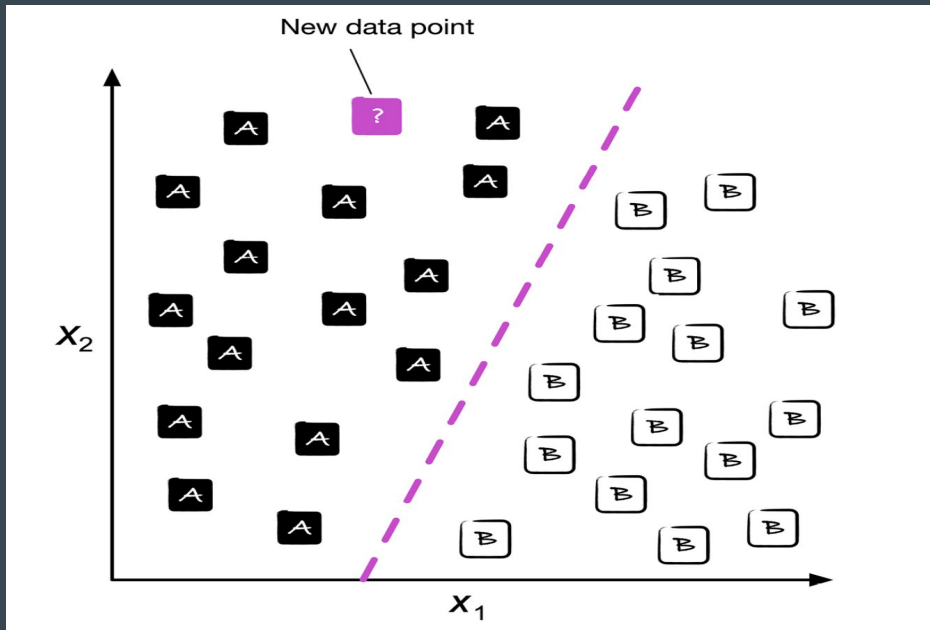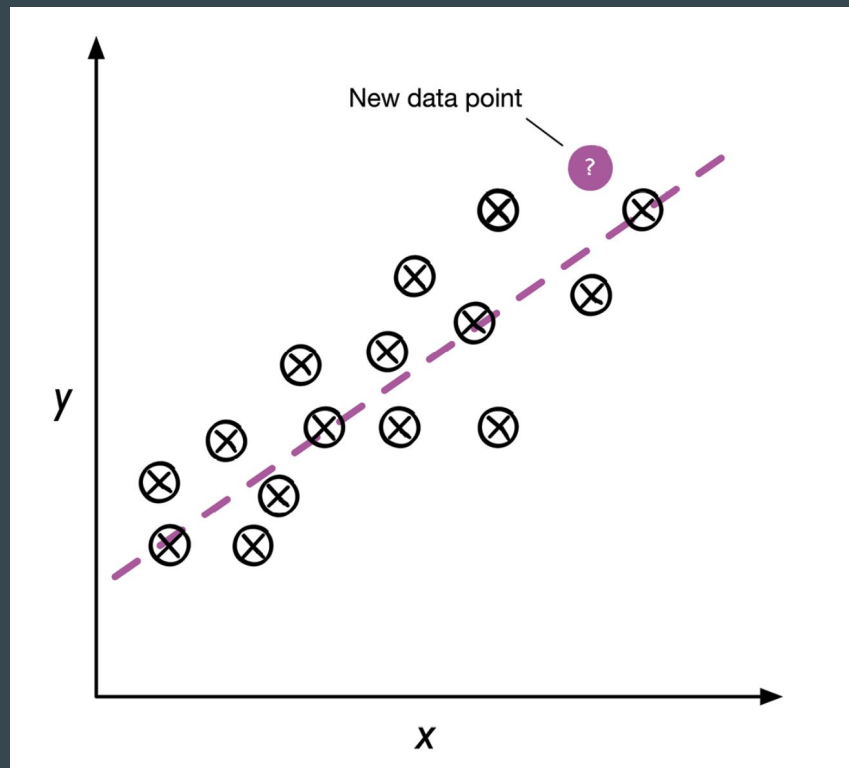

Regression vs Classification Model

Classification

❏   Subcategory of Supervised Learning
❏   Predict Categorical Class Labels
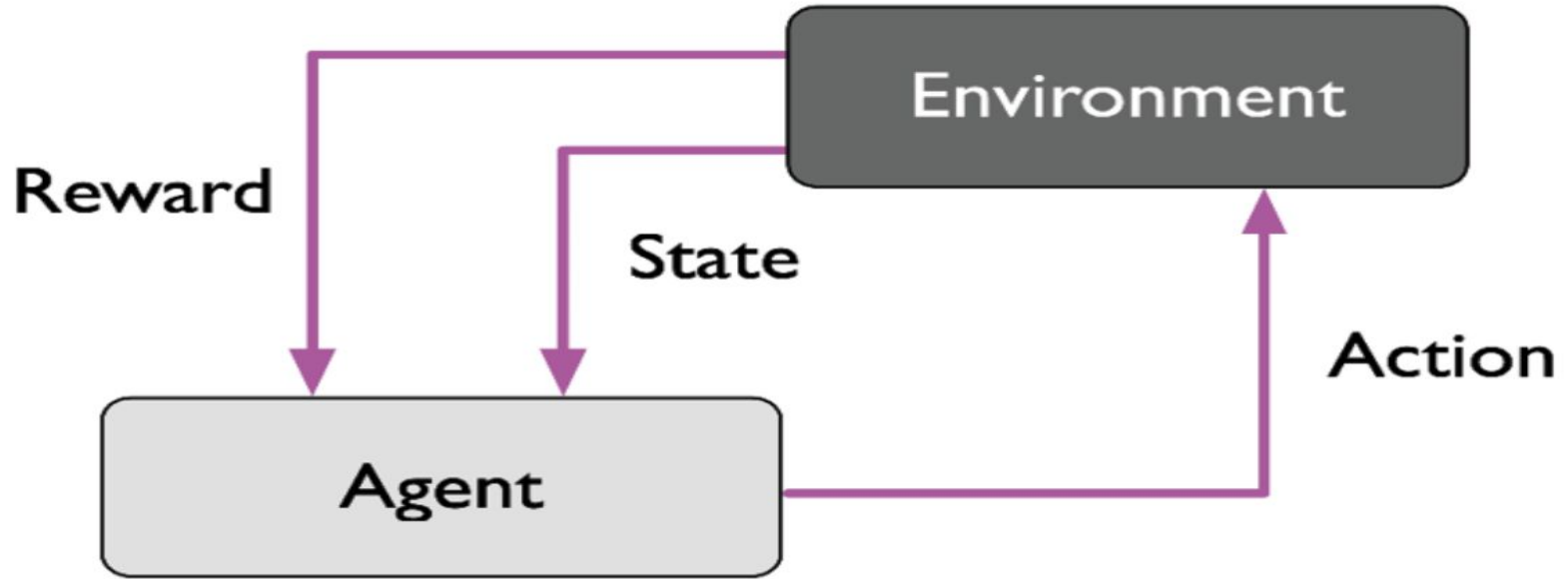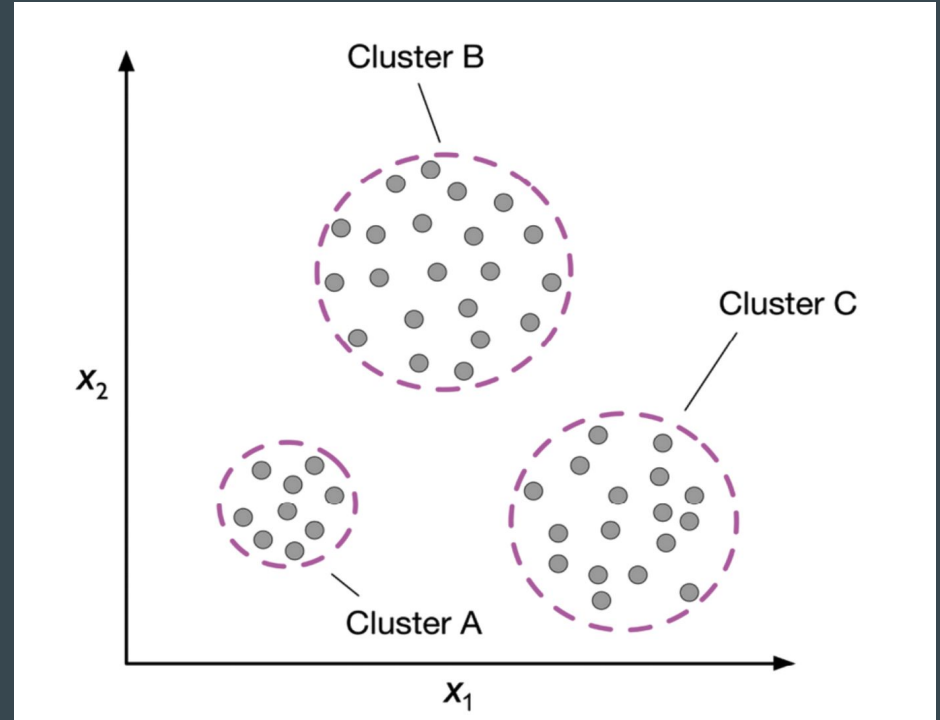❏   Could be multi-class ('A', 'B', 'C'…)

Regression

❏ Predict continuous outcomes
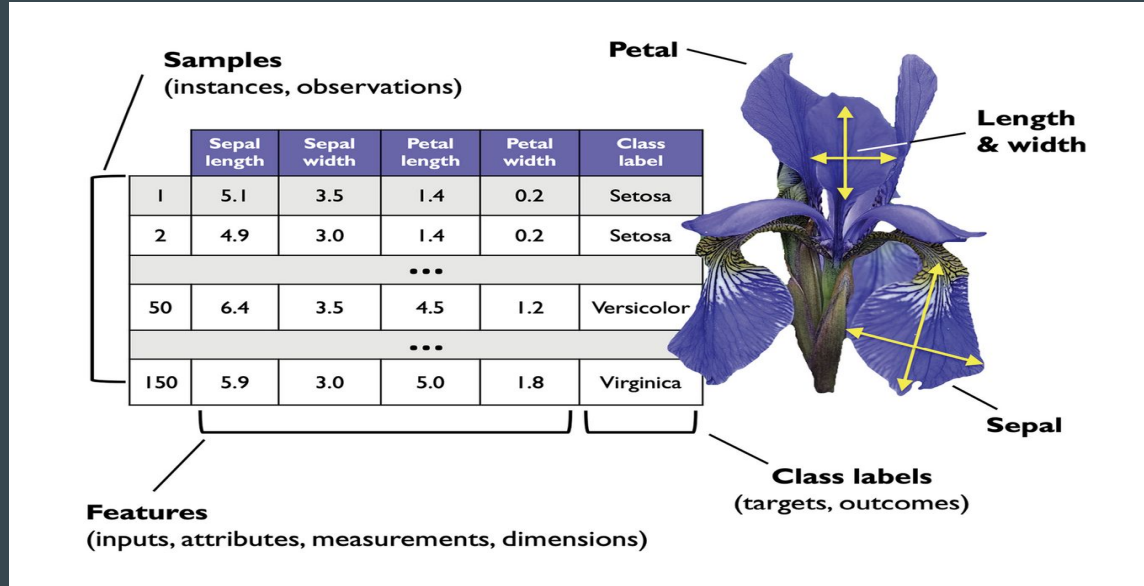❏ Predictor (explanatory) variables
❏ Continuous response variable

Reinforcement Learning

Unsupervised Learning (structure)

The Iris Dataset