

# Supervised vs Unsupervised Learning



## Supervised

Learn from labeled data - input-output pairs with known targets

### Clinical Examples:

- Disease diagnosis (healthy/sick)
- Drug response prediction
- Survival time estimation
- Risk score calculation



## Unsupervised

Discover patterns in unlabeled data - no predefined targets

### Clinical Examples:

- Patient subtype discovery
- Gene expression clustering
- Anomaly detection
- Feature extraction



## Hybrid Approaches

Semi-supervised Learning

Self-supervised Learning

Weakly-supervised Learning