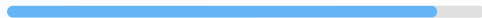## Supervised Learning

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DATA TYPE
Labeled data (X, y)

GOAL
Predict y from X

✓ Requires labeled data
✓ High accuracy
✓ Expensive labeling
✓ Domain expertise needed

Labeling Cost

Unsupervised Learning

DATA TYPE
Only X (unlabeled)

GOAL
Find structure in X

✓ No labels needed
✓ Discover patterns
✓ Highly scalable
✓ Cost-effective

Labeling Cost

Semi-supervised Learning

DATA TYPE
Small labeled + Large unlabeled

GOAL
Leverage both data types

✓ Best of both worlds
✓ Balanced approach
✓ Practical solution
✓ Often best results

Labeling Cost