

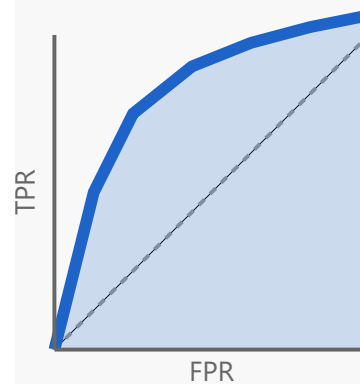
Classification Model Evaluation

Confusion Matrix, ROC, and Precision-Recall Curves

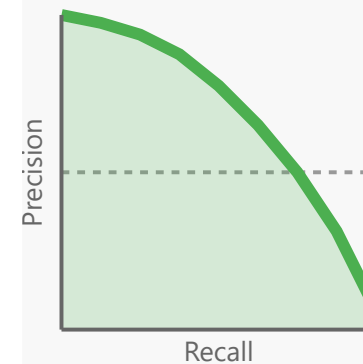
Confusion Matrix

Actual	85 TP	10 FP
	15 FN	90 TN

ROC Curve



PR Curve



Metrics

Confusion Matrix

- TP, FP, FN, TN
- Normalize by row/col

ROC Curve

- Balanced classes
- AUC summarizes

PR Curve

- Imbalanced data
- Focus on positive



When to Use

Predicted

Prediction outcomes grid

Accuracy: 87.5%

TPR vs FPR

AUC: 0.92

Precision vs Recall

AP: 0.88

- ▶ ROC: balanced classes
- ▶ PR: imbalanced datasets
- ▶ CM: detailed breakdown

✓ Best Practices

- ✓ Compare models
- ✓ Select threshold
- ✓ Balance P & R by cost
- ✓ Multi-class: one-vs-rest