Precision vs Recall

formulas

Precision

"When I say 'dog', am I right?"

$$Precision = \frac{TP}{TP + FP}$$

High precision = Few false alarms

Recall

"Did I find all the dogs?"

$$Recall = \frac{TP}{TP + FN}$$

High recall = Few missed objects
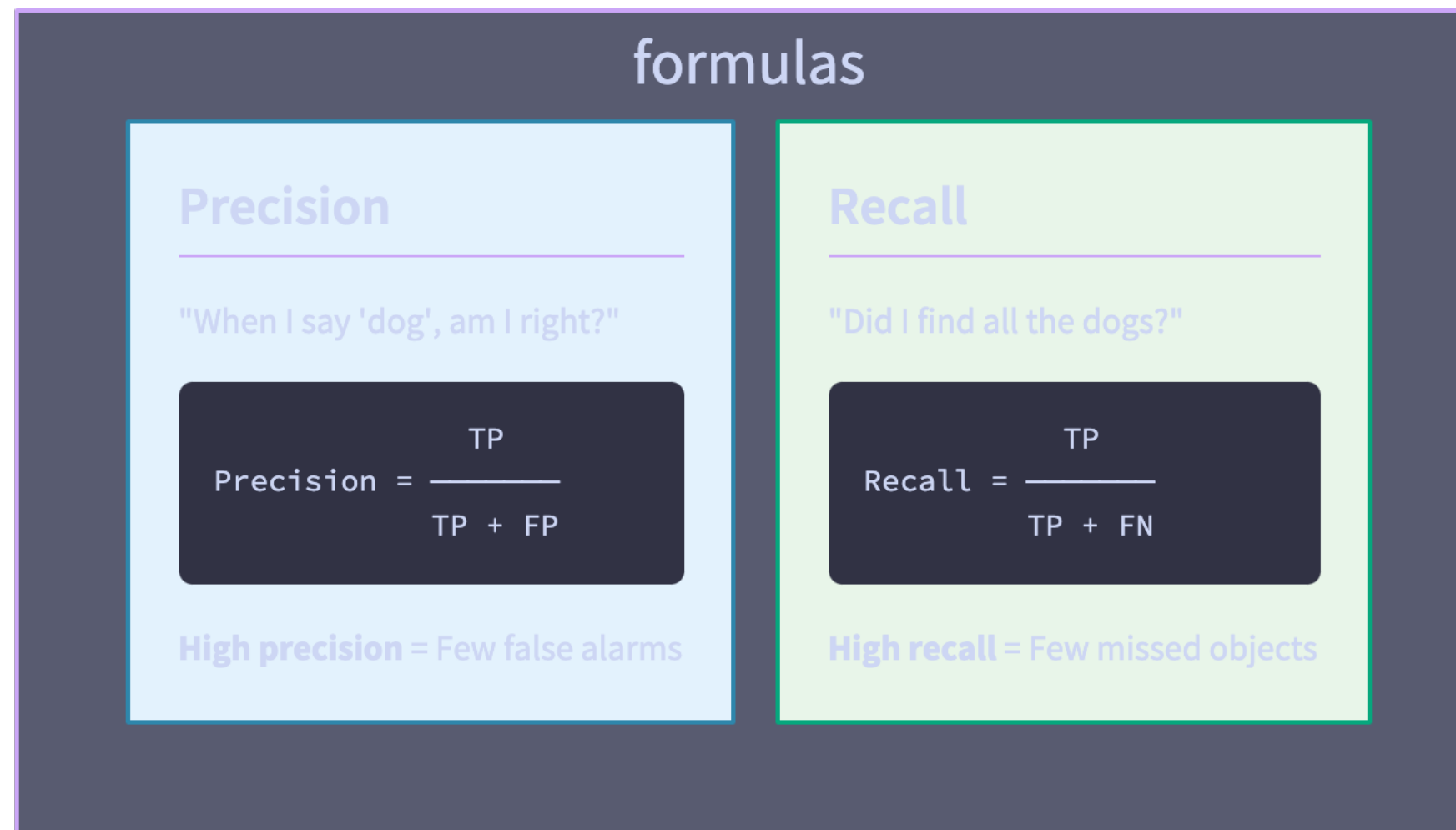

TP (True Positive): Correctly detected object **FP** (False Positive): Detection where no object exists **FN** (False Negative): Missed object (not detected)

Trade-off: Adjusting confidence threshold

• **High threshold (0.9)**: High precision, low recall (miss some objects) • **Low threshold (0.3)**: High recall, low precision (more false alarms)