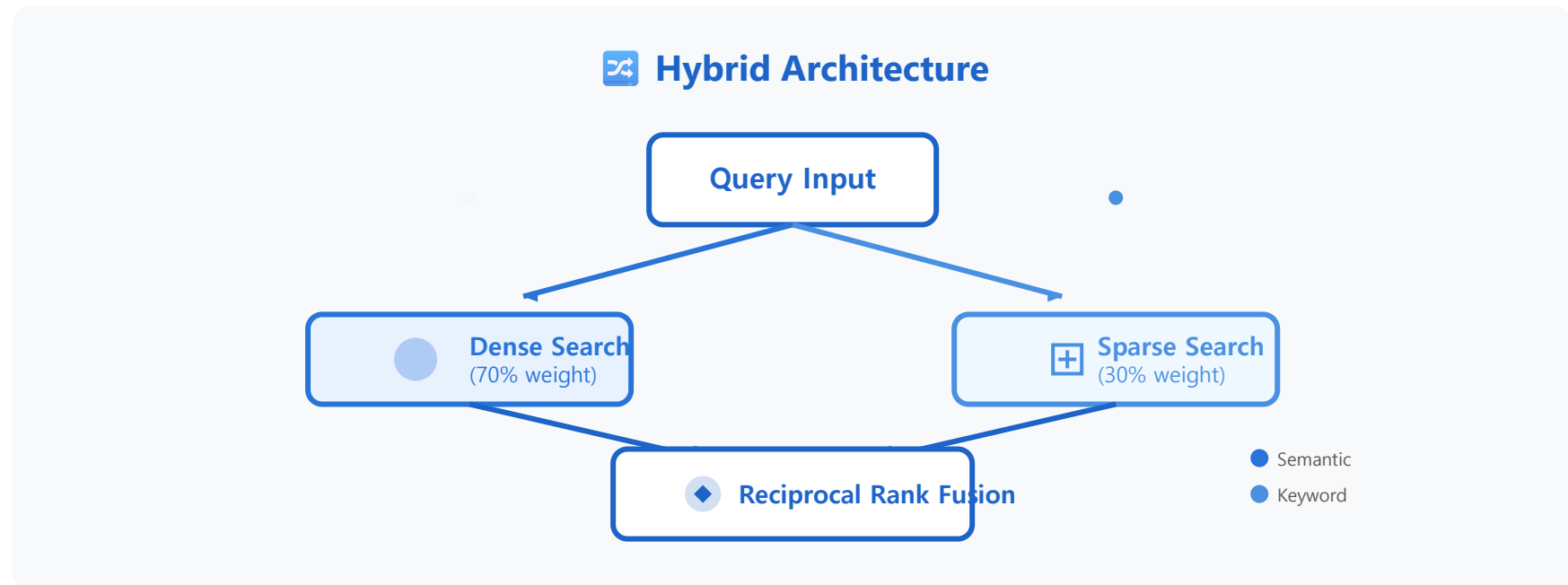


# Hybrid Search Implementation



## Weighted Sum

$$\text{score} = \alpha \cdot \text{dense} + (1-\alpha) \cdot \text{sparse}$$

## RRF (Recommended)

$$\text{score} = \sum 1/(k + \text{rank})$$

## Ensemble

Multiple models voting

## Performance Improvement

Precision@10: **89% → 95%**

Recall@10: **76% → 92%**