

Vector Embedding Strategies

Dense Embeddings

BERT, BioBERT, Sentence-BERT



High-dimensional
continuous space

- Semantic similarity
- Context understanding
- Computational cost

Best for: "chest pain" ≈ "cardiac discomfort"

Sparse Embeddings

BM25, TF-IDF



Most values = 0
Only keywords

- Fast retrieval
- Interpretable
- No semantics

Best for: Exact term "ICD-10 I21.0"

Hybrid Approach

Dense + Sparse fusion



- Best of both
 - High accuracy (95%+)
 - More complex
- Recommended for medical applications

Dense



Retrieval Accuracy Comparison

Dimension Selection

384d - Fast, general purpose

768d - BERT standard

1024d - High precision