# Vector Database Indexing Strategies

HNSW (Hierarchical Navigable Small World) is a graph-based indexing strategy used in vector databases to enable fast approximate nearest neighbor search. It organizes vectors into multiple layers for efficient traversal.

LSH (Locality-Sensitive Hashing) uses hash functions to map similar vectors into the same buckets, allowing faster similarity searches at the cost of accuracy.

IVF (Inverted File Index) partitions the vector space into clusters and searches only the most relevant clusters during a query, improving scalability.

Scalability in vector databases is achieved through sharding, approximate search techniques, and distributed indexing strategies.