

Exploring Semantic Search Using Embeddings and Vector

Databases Understanding Semantic Search: Semantic search aims to understand the meaning behind words and phrases, allowing search engines to provide more contextually relevant results. Unlike traditional keyword-based searches that rely on exact matches, semantic search takes into account the relationship between words, their contextual significance, and even the intent behind the query. This is achieved through the use of embeddings and vector databases.

Embeddings: Embeddings are numerical representations of words or phrases in a continuous vector space. These representations capture semantic relationships between words by placing similar words closer together in the vector space.

Vector Databases: Vector databases, also known as similarity search databases, are designed to efficiently store and query vector representations. These databases can rapidly identify similar vectors, making them ideal for semantic search tasks. Instead of comparing queries against an entire dataset, vector databases narrow down the search by calculating the similarity between the query vector and the stored vectors. This significantly reduces the computational load and speeds up the search process.

EX= Legal Research: Legal professionals often require comprehensive research on specific legal cases or precedents. Semantic search helps lawyers find relevant legal documents and cases by understanding the context of their queries. Searching for “landlord responsibilities in property disputes” could lead to documents discussing relevant laws, regulations, and case outcomes. s)