# ARTIFICIAL INTELLIGENCE

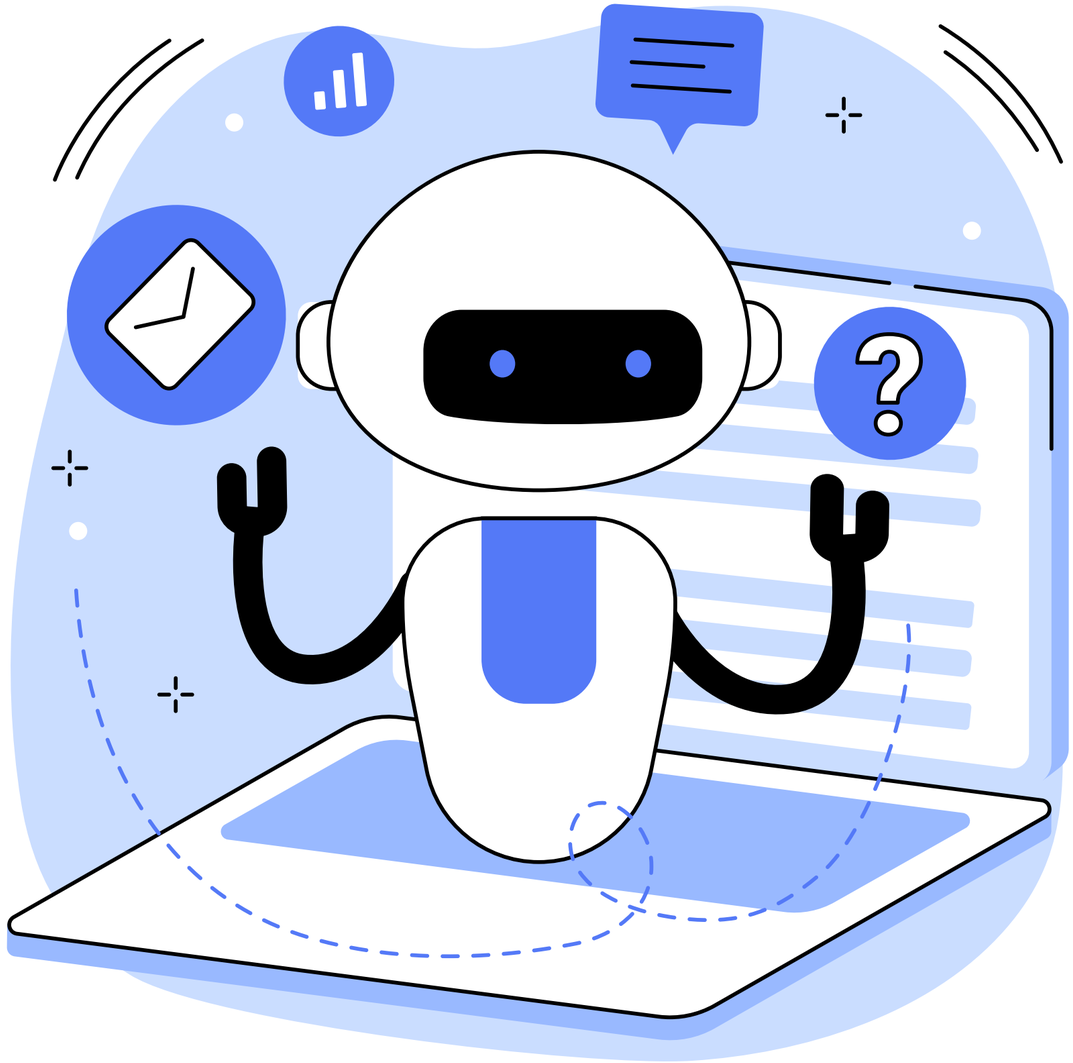
## Master Class

# CONTENTS

# KEYWORD SEARCH

Keyword search finds documents containing specific words or phrases by matching exact terms. It's fast and works well when you know the precise keywords to look for.

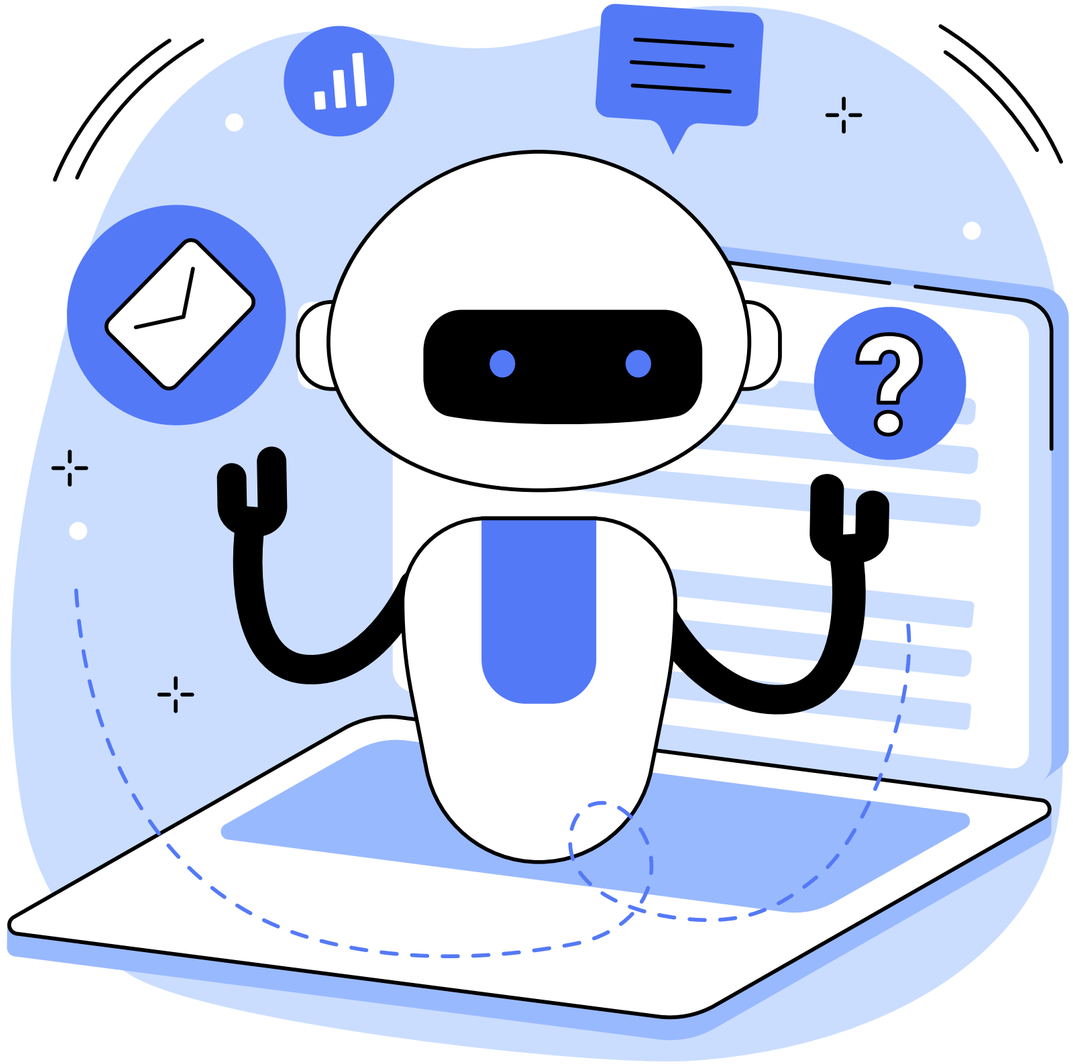
"Find documents by matching exact words."



# INDEXES

Indexes speed up search by organizing data for quick lookups, so you can find information much faster than scanning everything. They are essential for large databases and search engines.

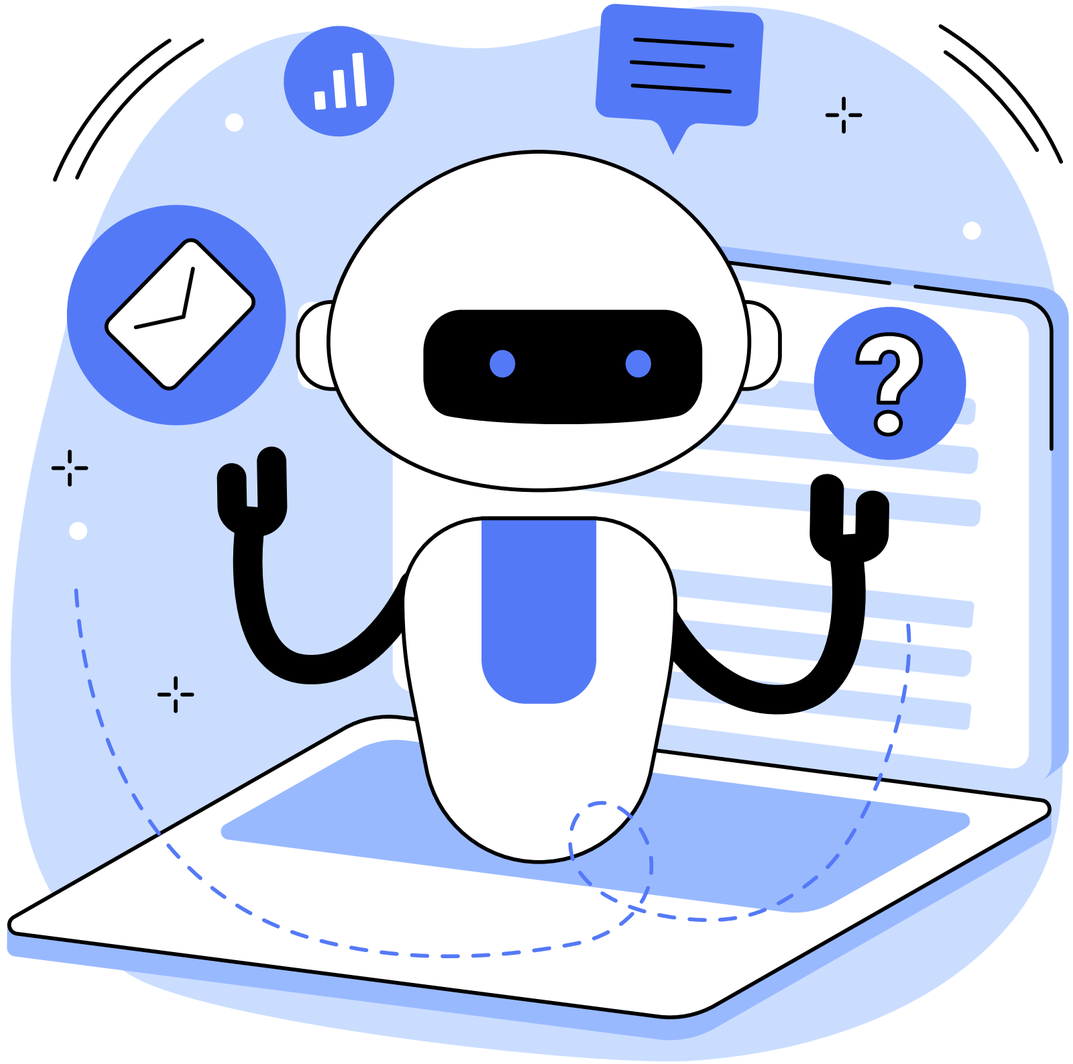
"Organized data for fast searching."



# SEMANTIC SEARCH

Semantic search goes beyond keywords to find results based on meaning, context, and relationships in text. It enables discovery even when search terms don't exactly match document wording.

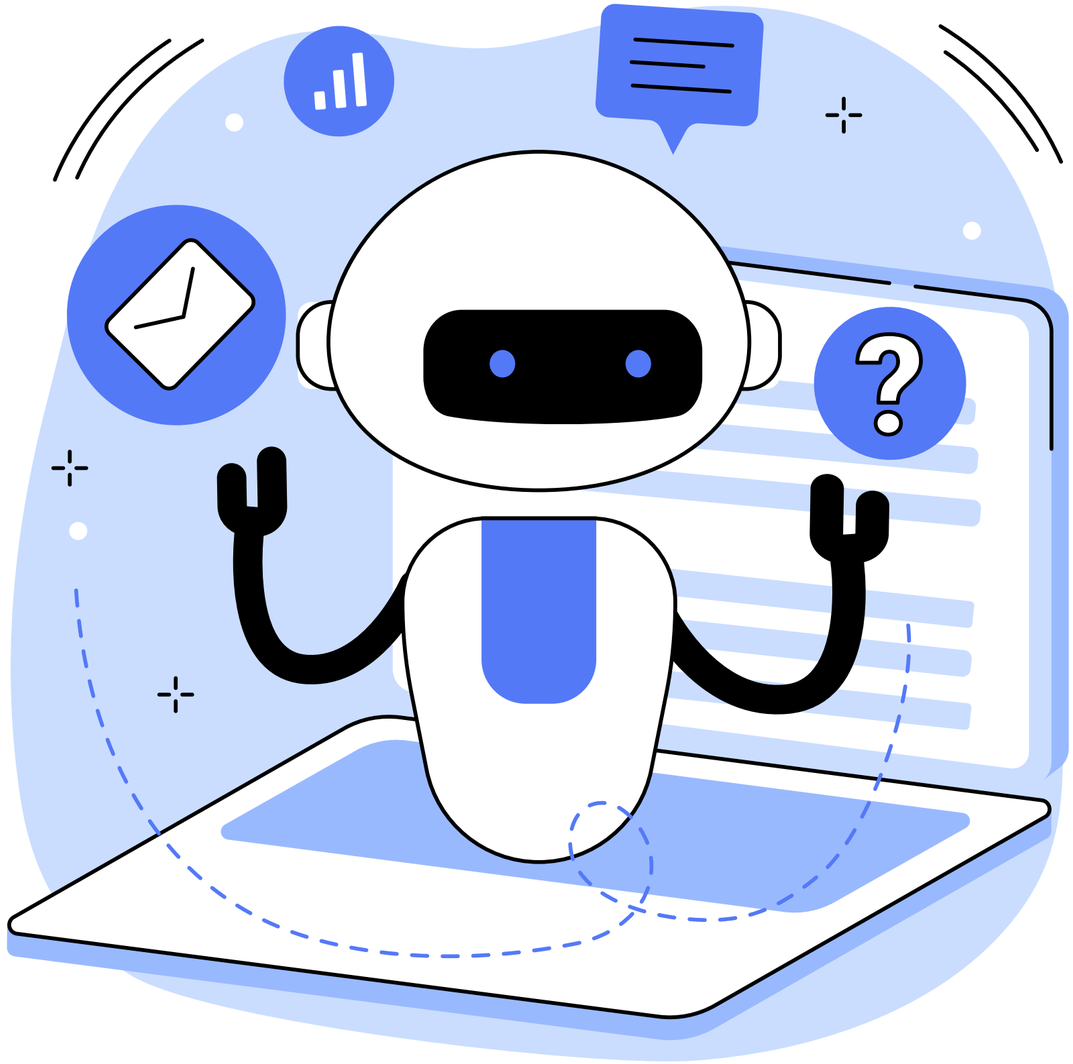
"Search by meaning, not just words."



# VECTORS

A vector is a list of numbers that can represent text, images, or other data in a way that computers can compare for similarity or patterns. In AI, vectors capture key features of information.

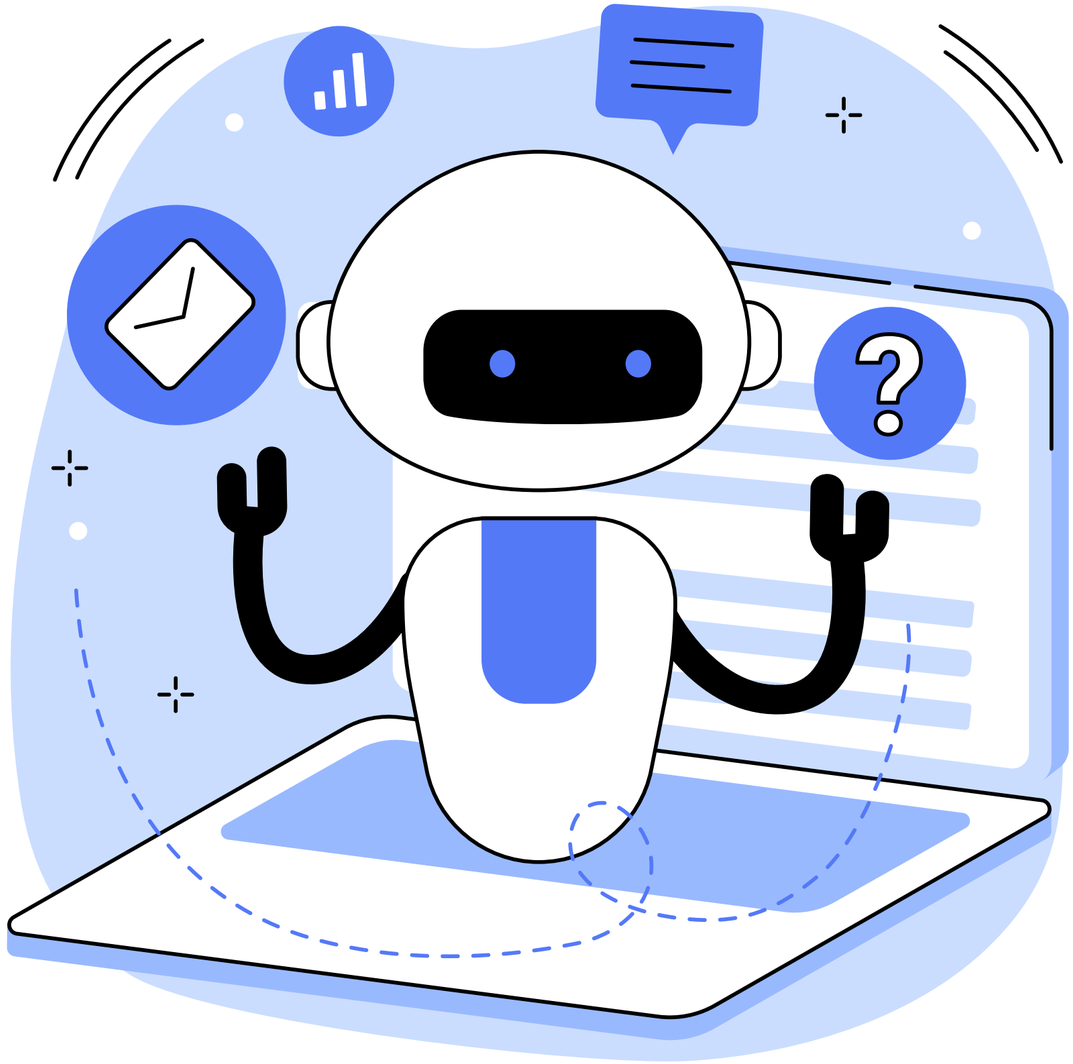
"Numeric representation of features."



# EMBEDDINGS

Embeddings are dense vector representations that capture the essence of words, sentences, or data for semantic tasks. They let models compare meanings efficiently.

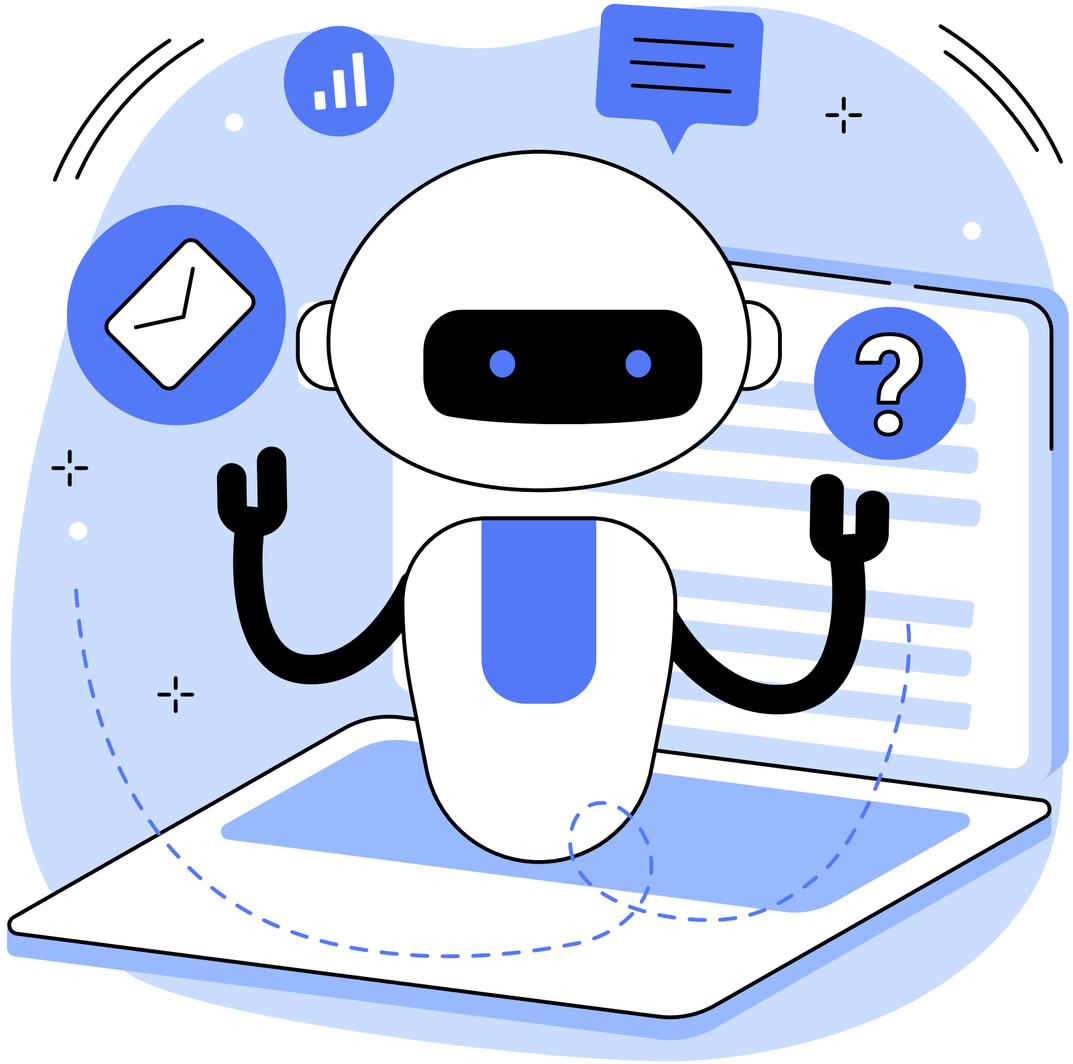
"Meaning-packed numbers for AI."



# SENTENCE TRANSFORMERS

Sentence Transformers are AI models that turn whole sentences or paragraphs into meaningful vector embeddings, helping systems understand and compare text on a deeper level.

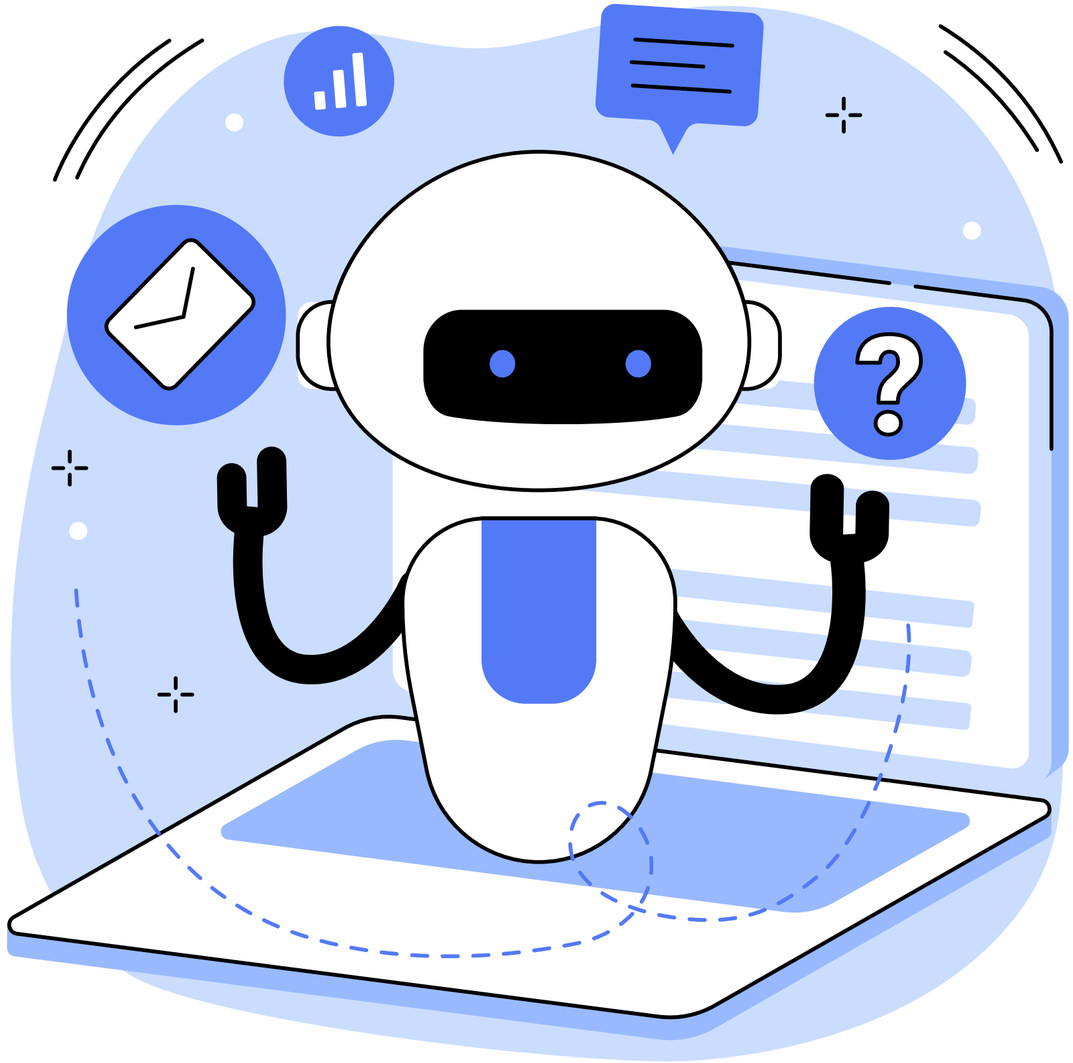
"Turn sentences into semantic vectors."



# VECTOR DATABASES

Vector databases store and index vector embeddings for blazing-fast similarity and semantic searches. They are key to modern AI-powered retrieval and recommendation engines.

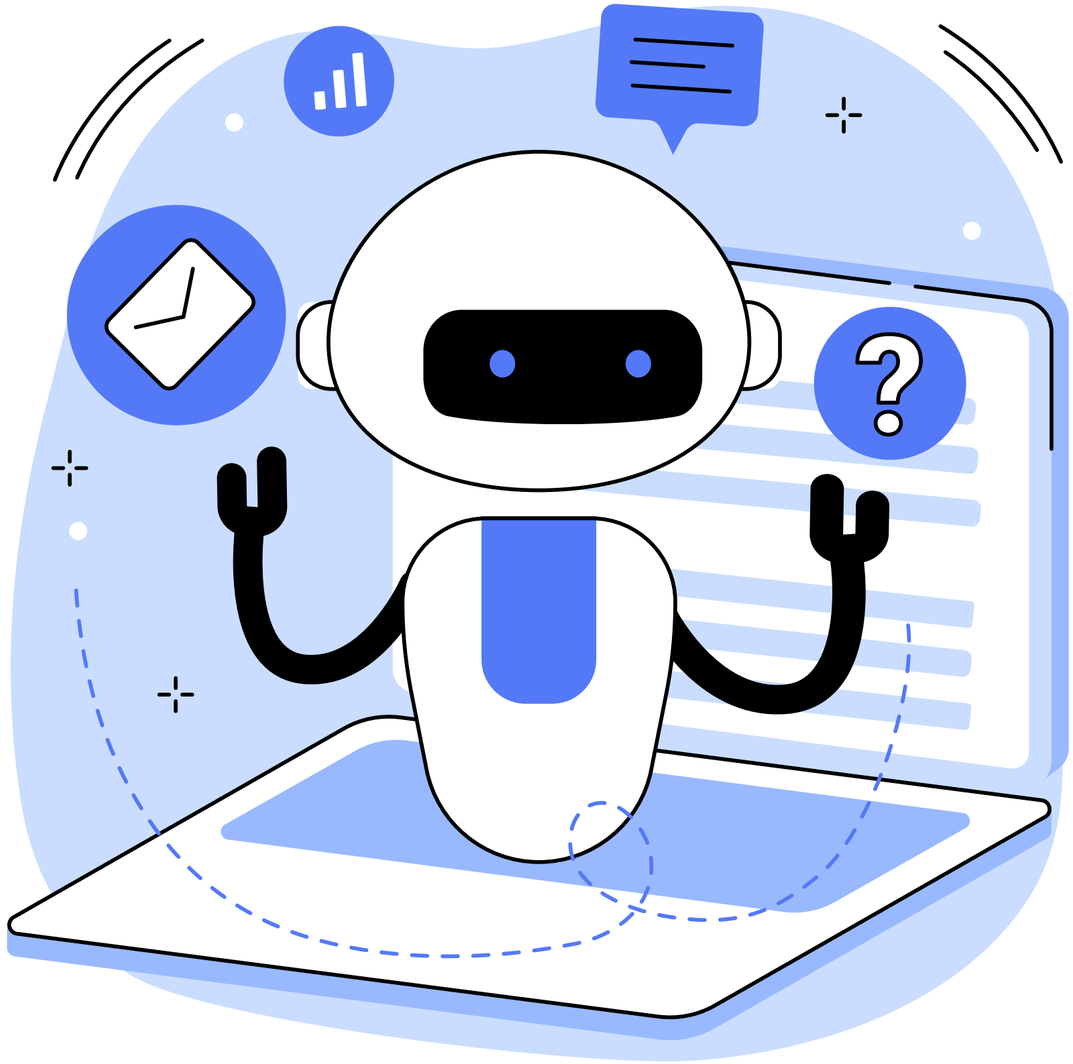
"Databases for semantic similarity search."



# COSINE SIMILARITY

Cosine similarity measures how close two vectors are by comparing their angles. It’s widely used to find how similar texts or embeddings are in semantic search.

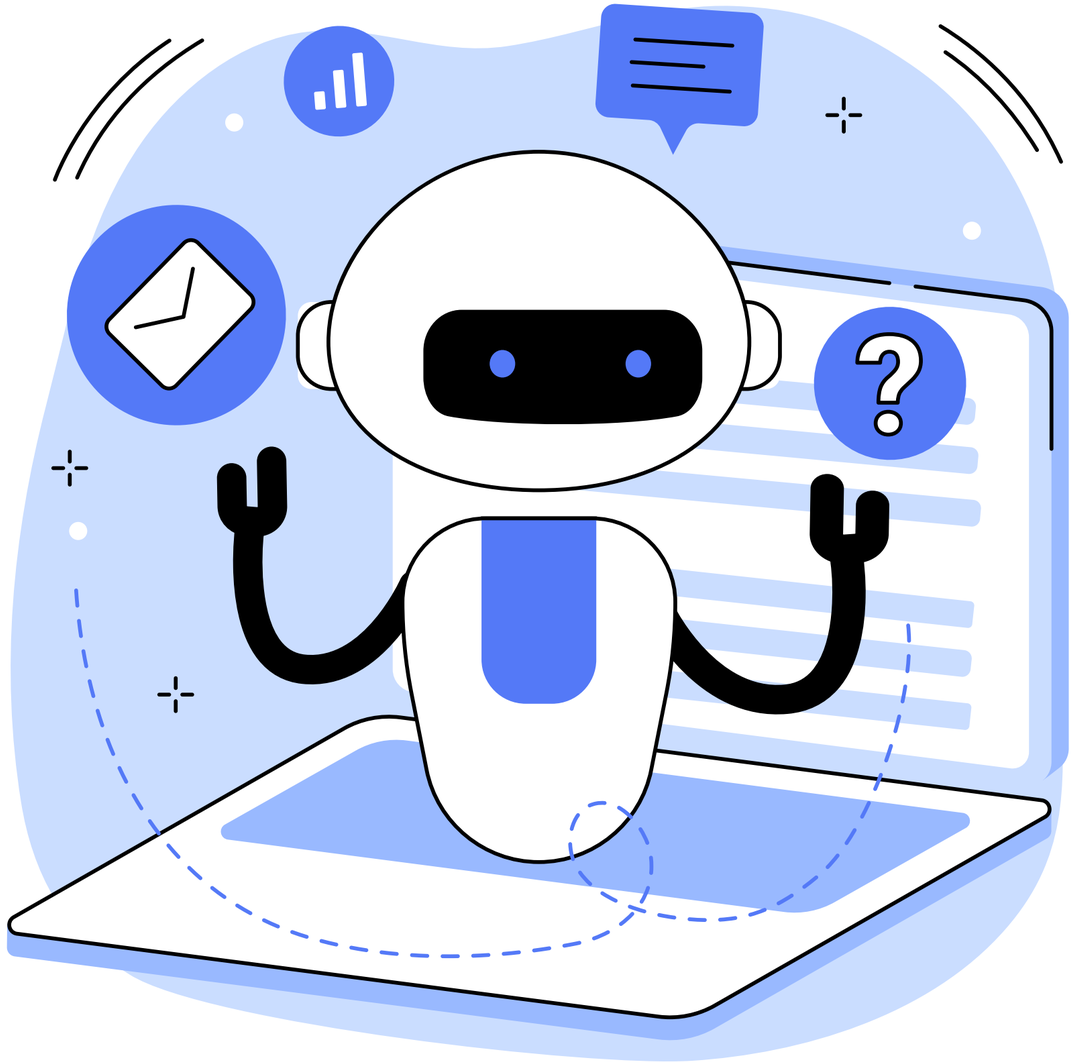
"Compare meaning by measuring angles."



# HYBRID SEARCH

Hybrid search combines keyword and semantic search, letting you find relevant results by both exact word matches and overall meaning, with optional filters on metadata.

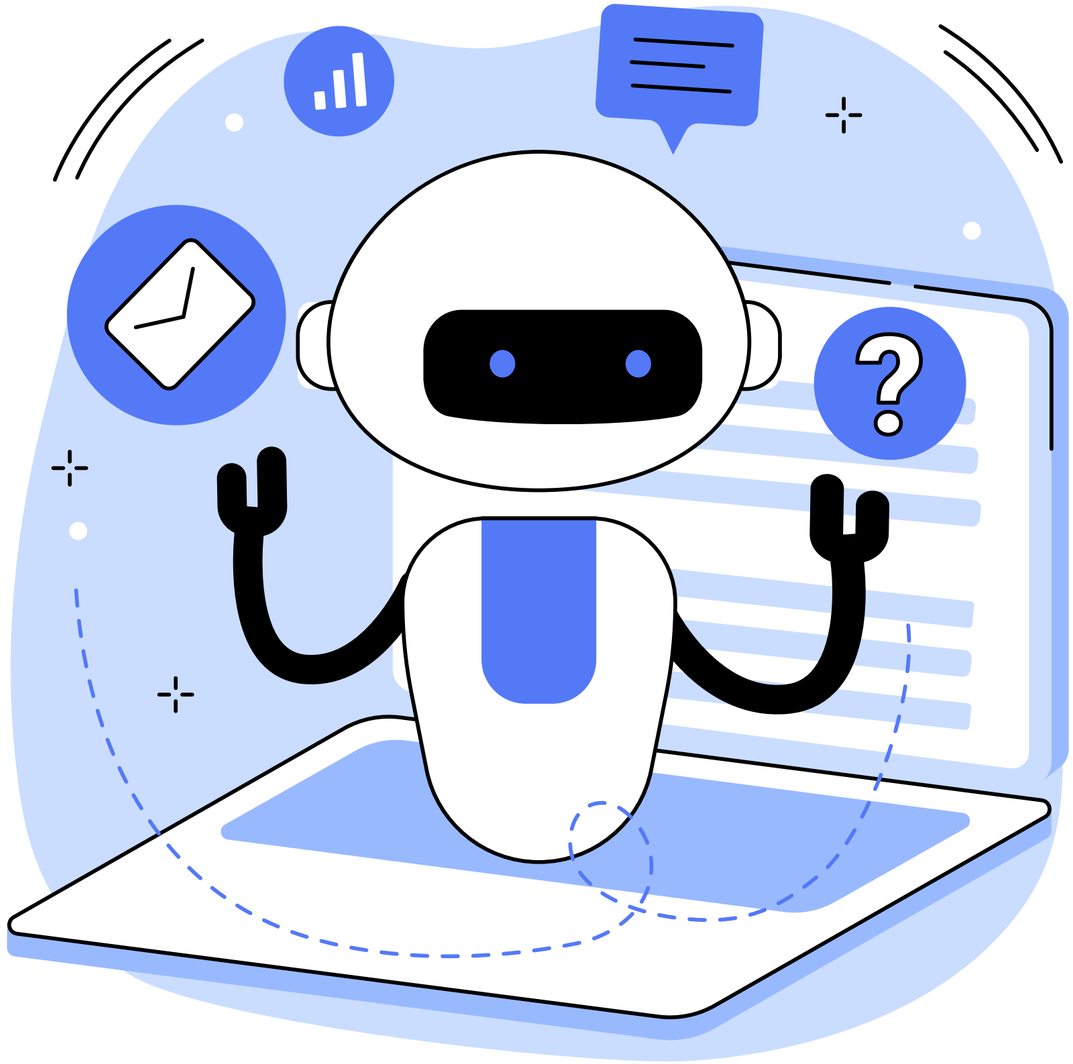
"Mix keyword precision with semantic discovery."



# KNN (K-NEAREST NEIGHBORS)

KNN locates the K closest data points to a query by analyzing vectors. In vector search, it finds the most similar results, ranked by how close their meanings are.

"Find the closest matches by meaning."



# THANK YOU FOR LISTENING!