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NOTE: I CONVERTED DATASET INTO CSV FILE FOR MY CONVENIENCE.

Github link: https://github.com/Patrick-Raja/FarmwiseAI-assessment

ASSESSMENT METHODOLOGY:

PLATFORM: JUPITER NOTEBOOK

LIBRARIES USED: pandas, langchain, openai, openaiembeddings, numpy, faiss.

OPENAI EMBEDDINGS:

The model generates contextual embeddings for input text. Unlike traditional word embeddings that assign a fixed vector to each word, contextual embeddings consider the surrounding context of the word in a given sentence. The embeddings are dynamic and change based on the position of the word in the context. This allows the model to capture nuances and context-specific meanings.

An embedding is a vector (list) of floating point numbers. The distance between two vectors measures their relatedness. Small distances suggest high relatedness and large distances suggest low relatedness.

FAISS:

FAISS (Facebook AI Similarity Search) is a library that allows developers to quickly search for embeddings of multimedia documents that are similar to each other. It solves limitations of traditional query search engines that are optimized for hash-based searches, and provides more scalable similarity search functions.

Faiss creates an index structure that organizes the vectors for fast search. Faiss uses various distance metrics to calculate the similarity or distance between vectors. Common metrics include Euclidean distance, cosine similarity, inner product, etc. Given a query vector, Faiss efficiently searches for the nearest neighbors based on the defined distance metric.