

VECTOR BASED IMAGE SEARCH IN RUBY ON RAILS APPLICATION USING WEAVIATE VECTOR DATABASE



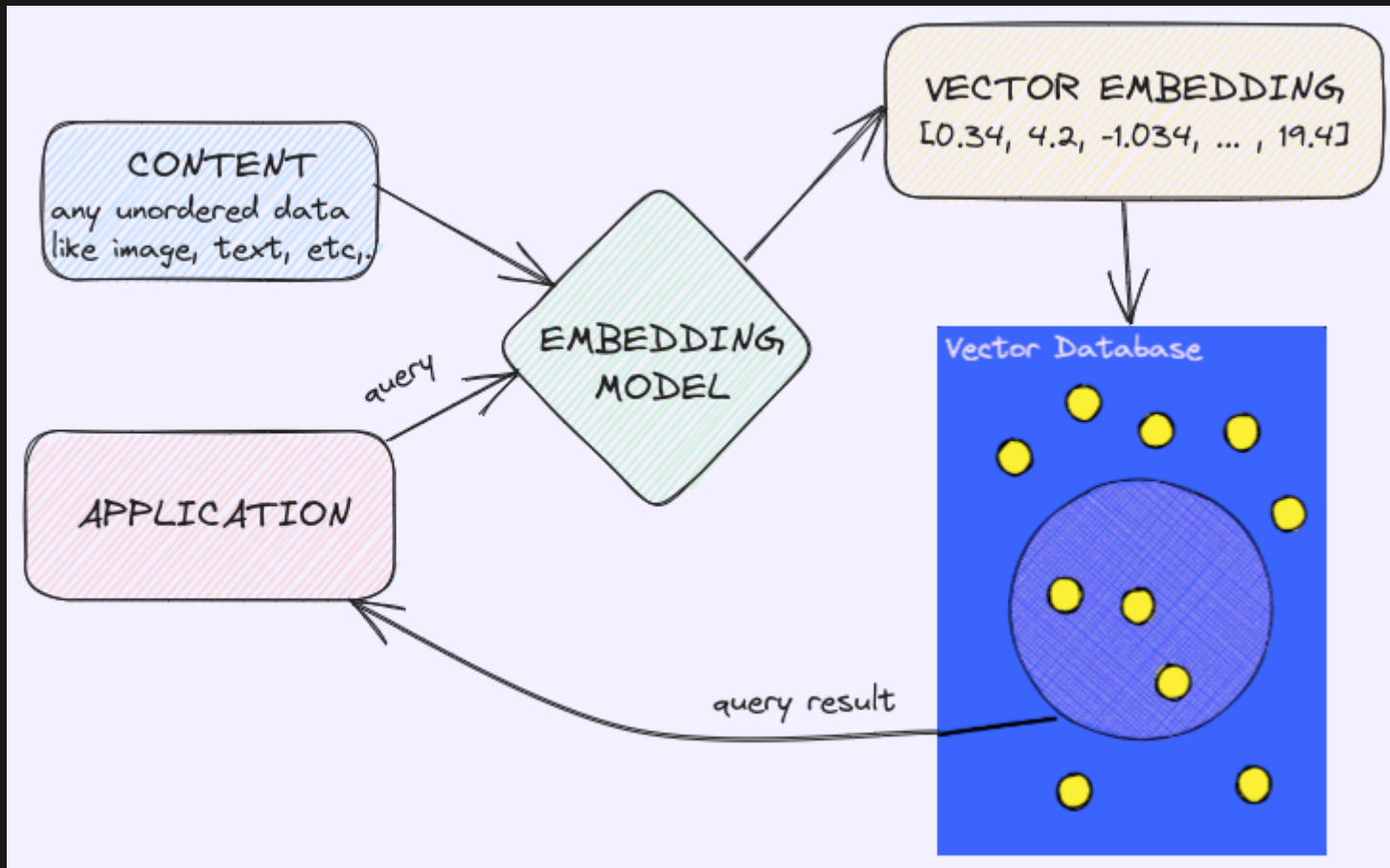
WHAT IS A VECTOR?

Vector is a one-dimensional array that holds numerical values representing data, features, or parameters used in algorithms like neural networks, linear regression, and word embeddings. Vectors facilitate efficient mathematical operations and enable machines to learn patterns and relationships from data.

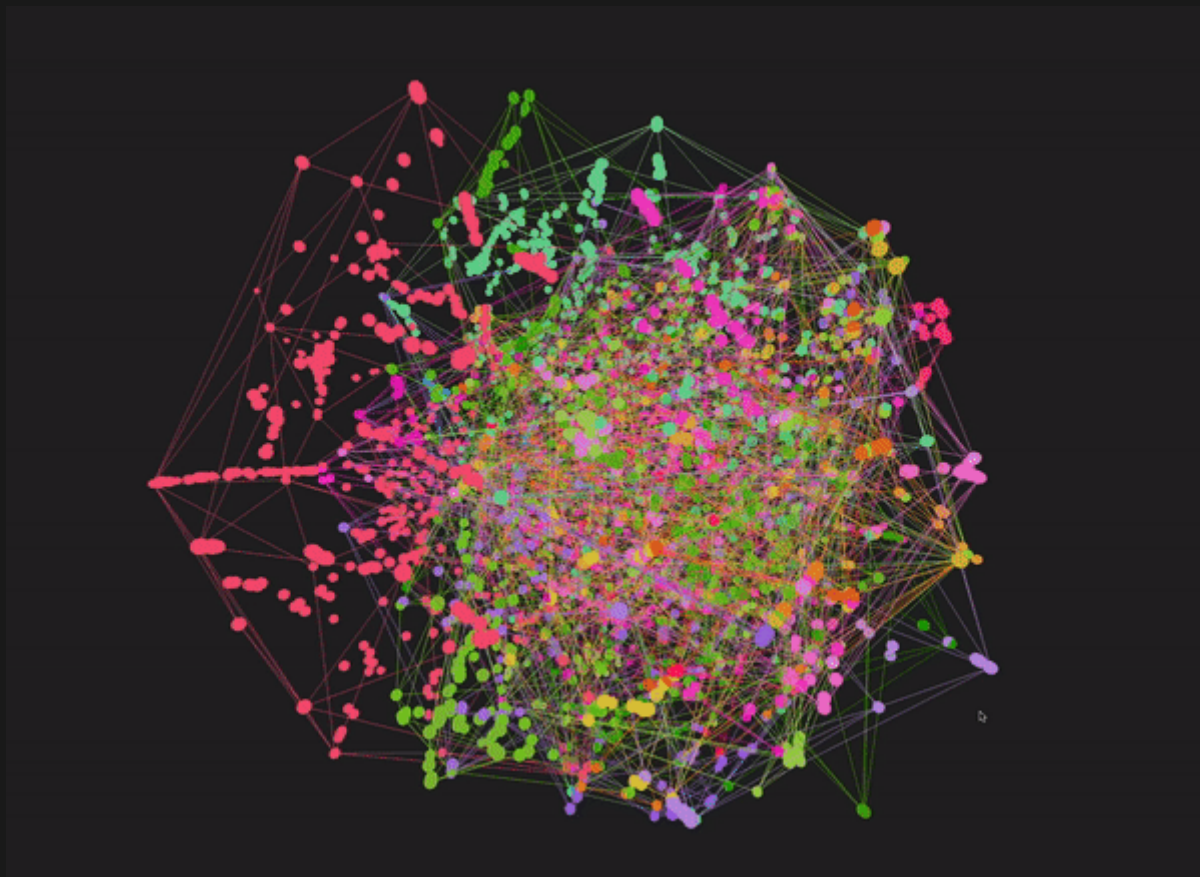
<i>dog</i> →	0.6	0.9	0.1	0.4	-0.7	-0.3	-0.2
<i>puppy</i> →	0.5	0.8	-0.1	0.2	-0.6	-0.5	-0.1
<i>cat</i> →	0.7	-0.1	0.4	0.3	-0.4	-0.1	-0.3

VECTOR DATABASES

Type of database, that stores data as a high-dimensional value. Working with vector embeddings is more complex and the traditional databases can't keep up with it for providing insights and real-time analysis with the data. That's where vector DBs come into play, these are designed for handling this type of data and offer the performance, scalability, and flexibility you need to make the most out of your data.



The flow will be like this, first, we use the embedding model to create vectors from the content, next the vector embeddings of the content are inserted into the vector database, with some reference to the original content. Now using an application we will interact with the vector DB via the embedding model, on issuing a query we use the same embedding model to create embeddings for the query and use those to query the database for similar vector embeddings.



REFERENCES

- Demo project - [Fashion Procuts Image Search - inbakrish](#)
- Weaviate Ruby Gem blog - [Adding Intelligent Search to a Rails application with Weaviate](#)
- Image search implementation (typescript) video - [FireShip weaviate img search](#)

