

# 01- What is embedding , vector and how it connects together

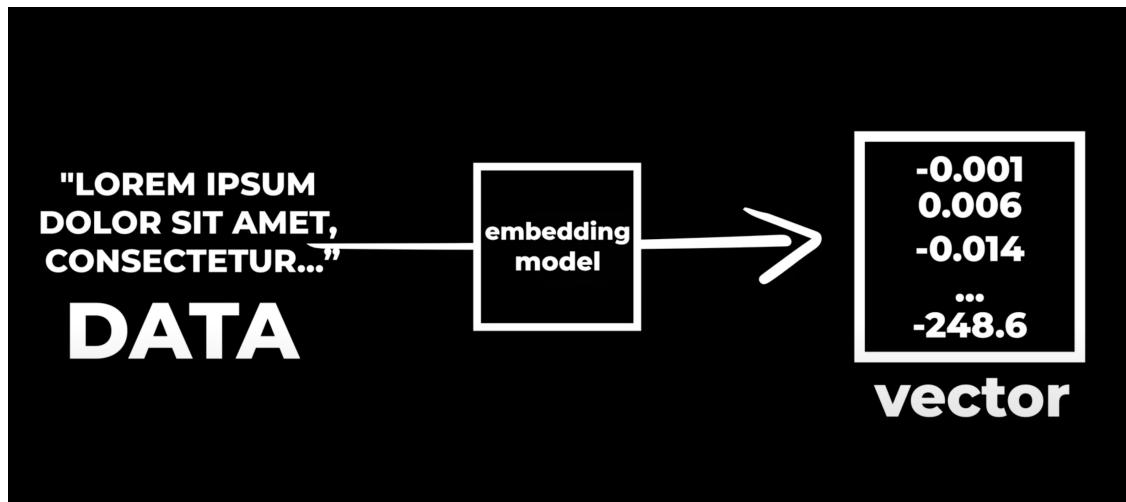
[Youtube link](#)

[Another YoutubeLink for RAG+langchain using python](#)

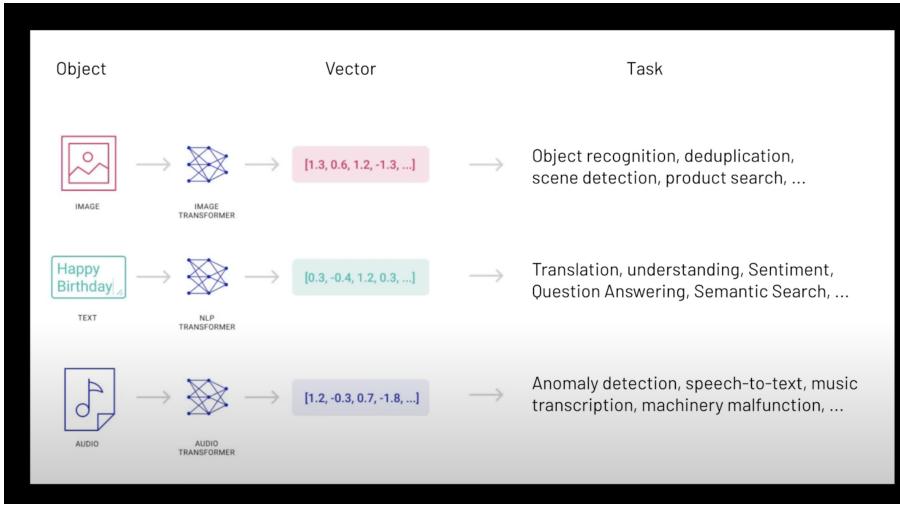
what is embedding



Its is data like words that have been converted to array representation

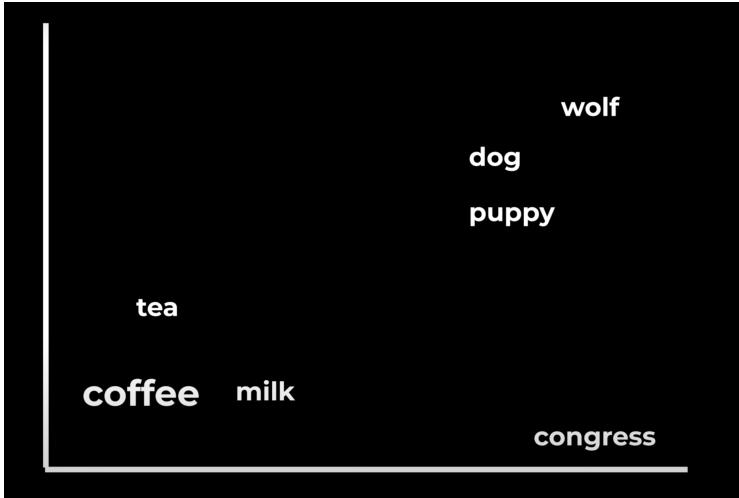


Example of vector:



Vector contains pattern of relationship. It is used to find similarity. For example in below 2-d representation of vector,

Now here's another example:



here, 0.5 matches, thus can be used to find similarity as dog and



puppy are interchangeable.

In reality vectors has hundreds of dimension showcasing multiple relationship between words.

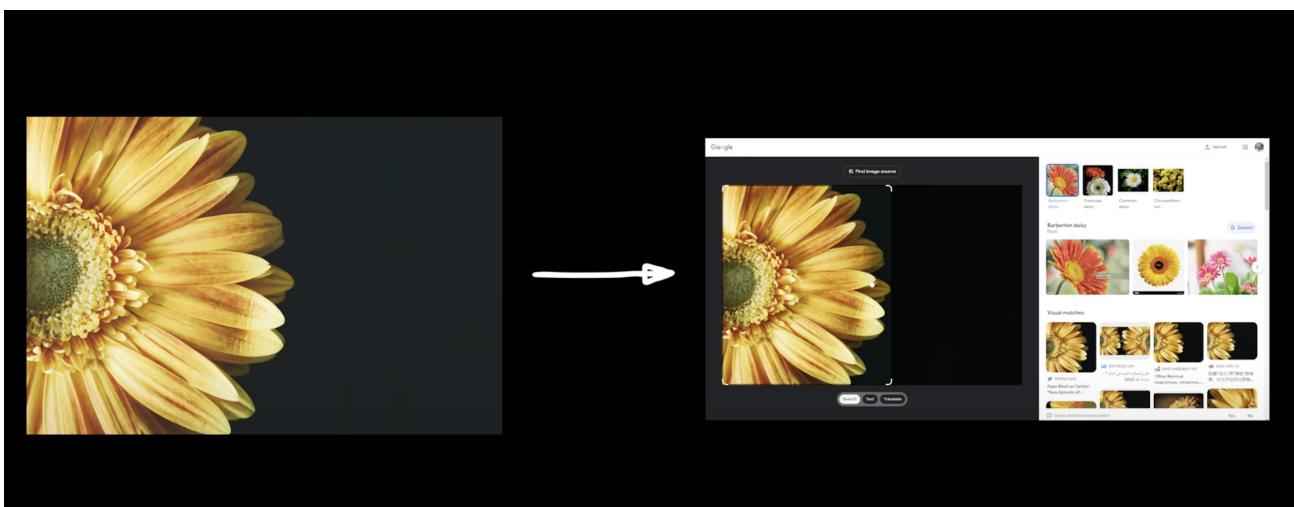
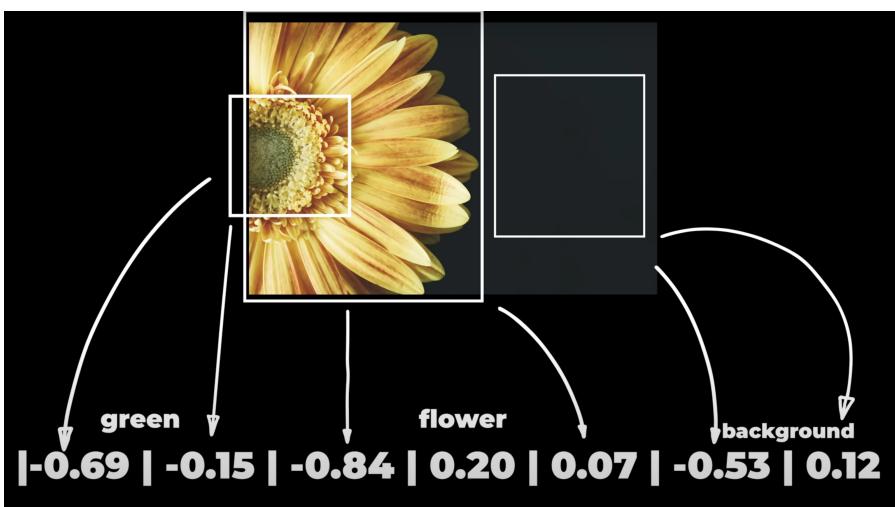
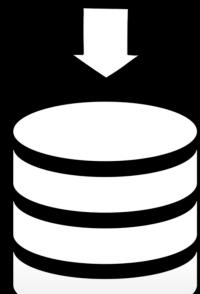


Image can also be vectorized and this is how even google image works for similar searches.



Once the embedding is created, it can be stored in a database. Database full of these is considered vector database.

**| -0.69 | -0.15 | -0.84 | 0.20 | 0.07 | -0.53 | 0.12**



**vector database**

Now this data can be used in multiple ways like :

- Searching, ranking similar results
- clustering based on embeddings.



Open AI has provided models to create the embeddings but don't provide a way to store them. This is where vector DB comes in place.

