Document Retrieval with Embeddings

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Importance of Document Retrieval

- Powerful, cheap strategy for building new product features

Embedding-based Retrieval at Scribd

Author	Published	Team
Div Dasani	April 12, 2021	Recommendations

Tags:
machinelearning, real-time, search, featured

Building recommendations systems like those implemented at large companies like Facebook and Pinterest can be accomplished using off

https://tech.scribd.com/blog/2021/embedding-based-retrieval-scribd.html

How LinkedIn Is Using Embeddings to Up Its Match Game for Job Seekers

Jacob Mannix October 5, 2023

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Co-Authors: Jacob Mannix and Shaobo Zhang

Think of how many times a day you use some type of search functionality across your devices and applications to discover information, find a contact, or a new job opportunity. The truth is we all depend on the ability to search for things online, and finding the right match to the information, organization, or to a job that maps to your skills and interests makes all the difference in our experiences and the knowledge we can gain.

The magic in search happens because of the technology that powers it. And one of the key technologies behind LinkedIn's search and recommendation features is embedding based retrieval (EBR). EBR helps deliver more relevant matches for our members and customers every day.

https://engineering.linkedin.com/blog/2023/how-linkedin-is-using-embeddings-to-up-its-match-game-for-job-se

Traditional Methods and Their Limitations

- **Keyword-based Searching**: Explicitly matching terms
- **Boolean Queries**: Using logical operators (AND, OR, NOT)

Limitations:

- Lack of semantic understanding
- Low relevance
- Manual optimization needed

Retrieval-Augmented Generation

https://learn.microsoft.com/en-us/azure/search/retrieval-augmented-generation-overview
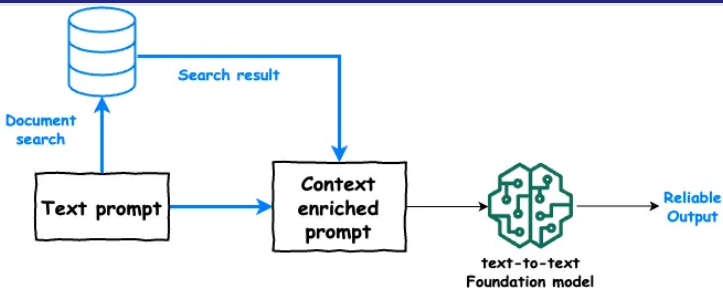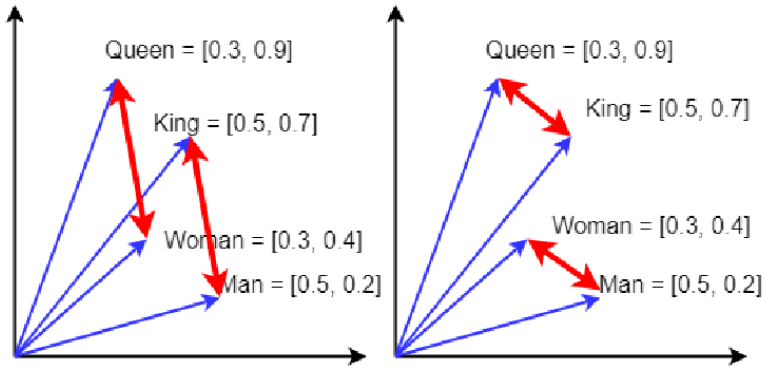
The Basics of Embeddings

What are Embeddings?

- Converting words to numerical space
- Example: Man <-> Woman is similar to King <-> Queen

Difference from Traditional Methods

- Understands semantic context
- Example: Differentiates "Apple" the company from "apple" the fruit

Demo

Brainstorming: Textual Datasets

Document
Retrieval with
Embeddings

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(Three minutes, Groups of three)

Think of as many different textual datasets as you can three minutes.

Brainstorming: Building Context

(Five minutes, Groups of three)

Pick one set.

- Think of a context you can build with that data
  - What field or area or discipline or topic can this data be used to support GPT in answering questions?
- Name that context.
- Come up with five questions that you think GPT could answer give that context.

Share your context and questions with the cohort.