



Milvus in Action:

The Vector Database Behind Troop's Shareholder Activism

Zen Yui | Troop



Speaker: Zen Yui, Troop

Zen is the co-founder and CTO of Troop, a corporate governance platform enabling everyday shareholders to collectively influence large corporations. Prior to Troop, Zen spent 9 years designing big data systems with Spark and Kafka for retail and healthcare industries. He holds a graduate CS degree specializing in cryptography and distributed systems from Cornell, and is passionate about data democracy and privacy.



troop

enabling corporate governance
with LLMs and embeddings
using Milvus

Zen Yui, October 2023



Troop builds technology that
enables everyday investors
to govern public companies

because corporate governance
is our collective responsibility

Troop has 2 products

Enterprise Proxy Advisory

Automated shareholder voting recommendations, powered by language models, so that millions of Americans can have their passively-managed wealth voted in accordance with their values.

Shareholder Activism Community App

A community platform for retail shareholders to collectively ideate and create new activism.

Sizing the problem

\$37T

managed by top 10
money managers!

>100M

investors have their
money managed in
ETFs, funds, etc

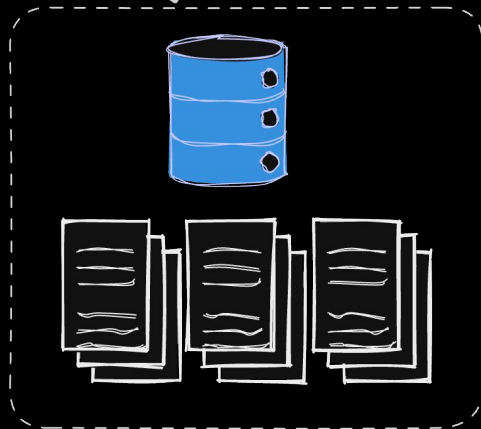
>3000

publicly traded
companies are owned
by these funds and
need shareholder
participation

Using Retrieval Augmented Generation
to turn unstructured SEC filings into
structured features and labeled data
that we can use in fine-tuned models

V1 solution on a single node

 LangChain + FAISS

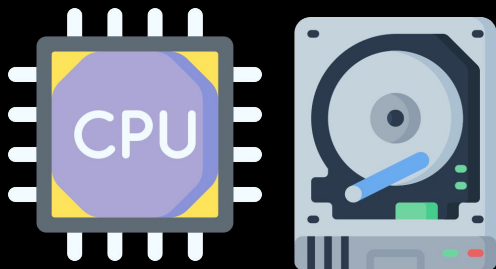


Question/Answer PDF parsing
via LangChain and FAISS

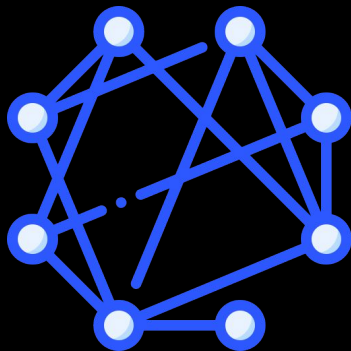
FAISS does allow persisting
the vectors to disk!

FAISS is very fast, but the
entire vector collection needs
to fit into memory

Scaling with Milvus



Separating storage
from compute

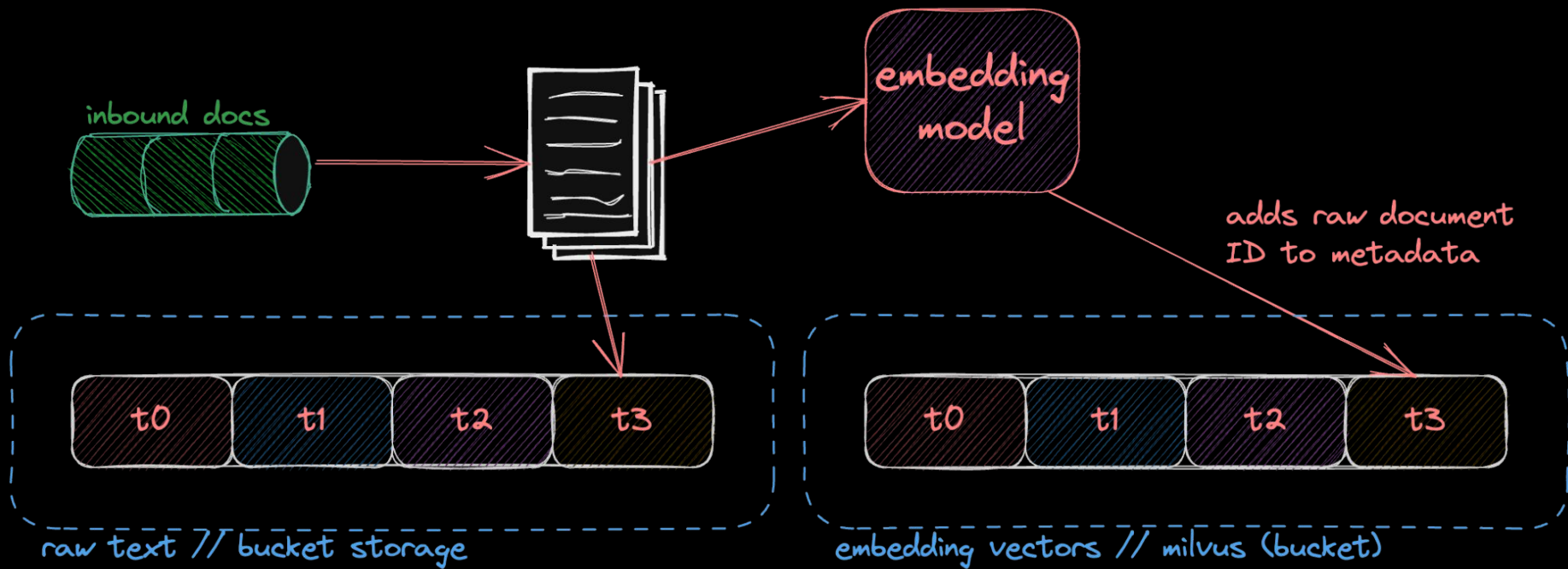


Ability to distributed
work and scale out
nodes under load

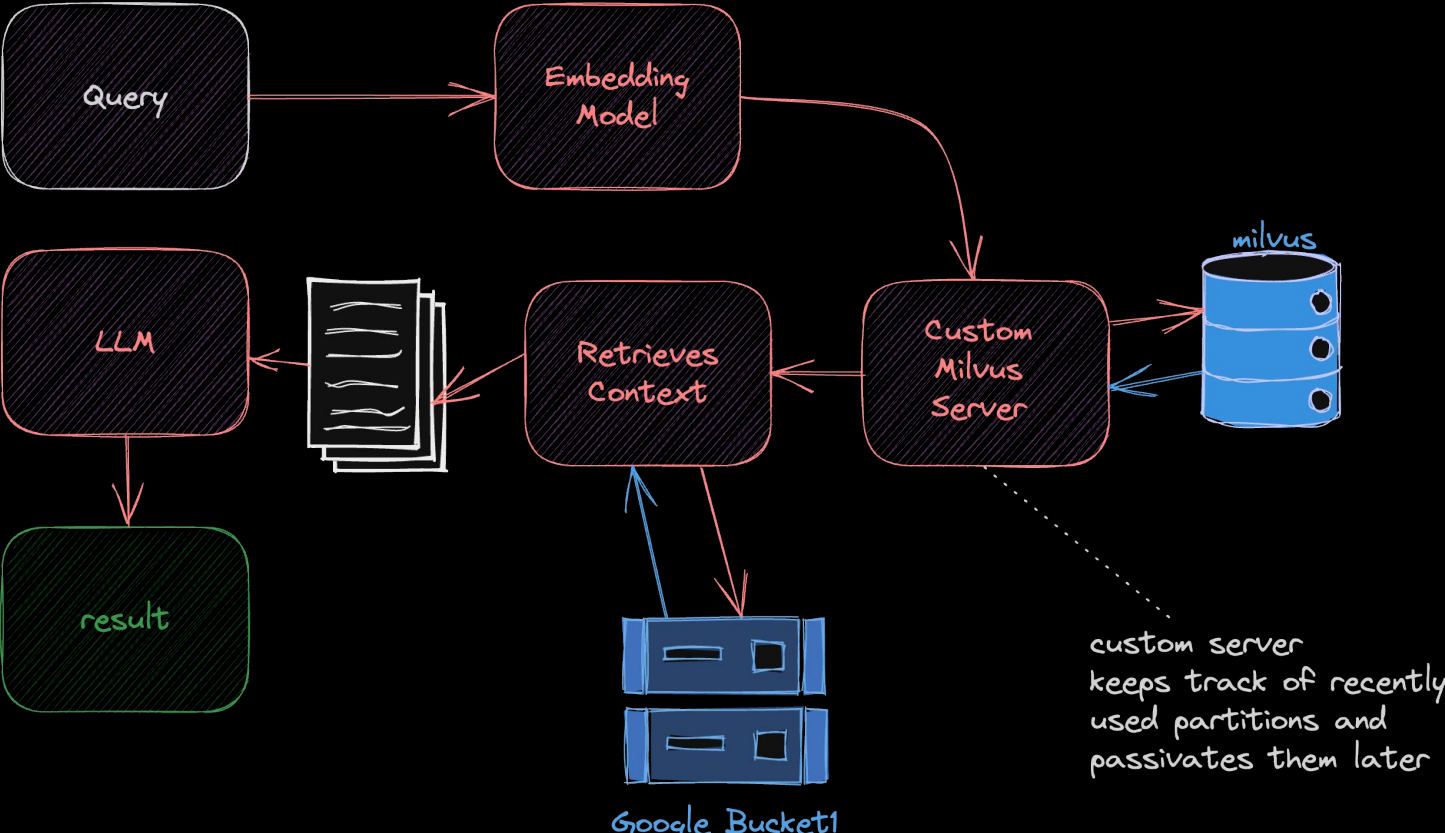


Self-hosting and
running in Kubernetes!

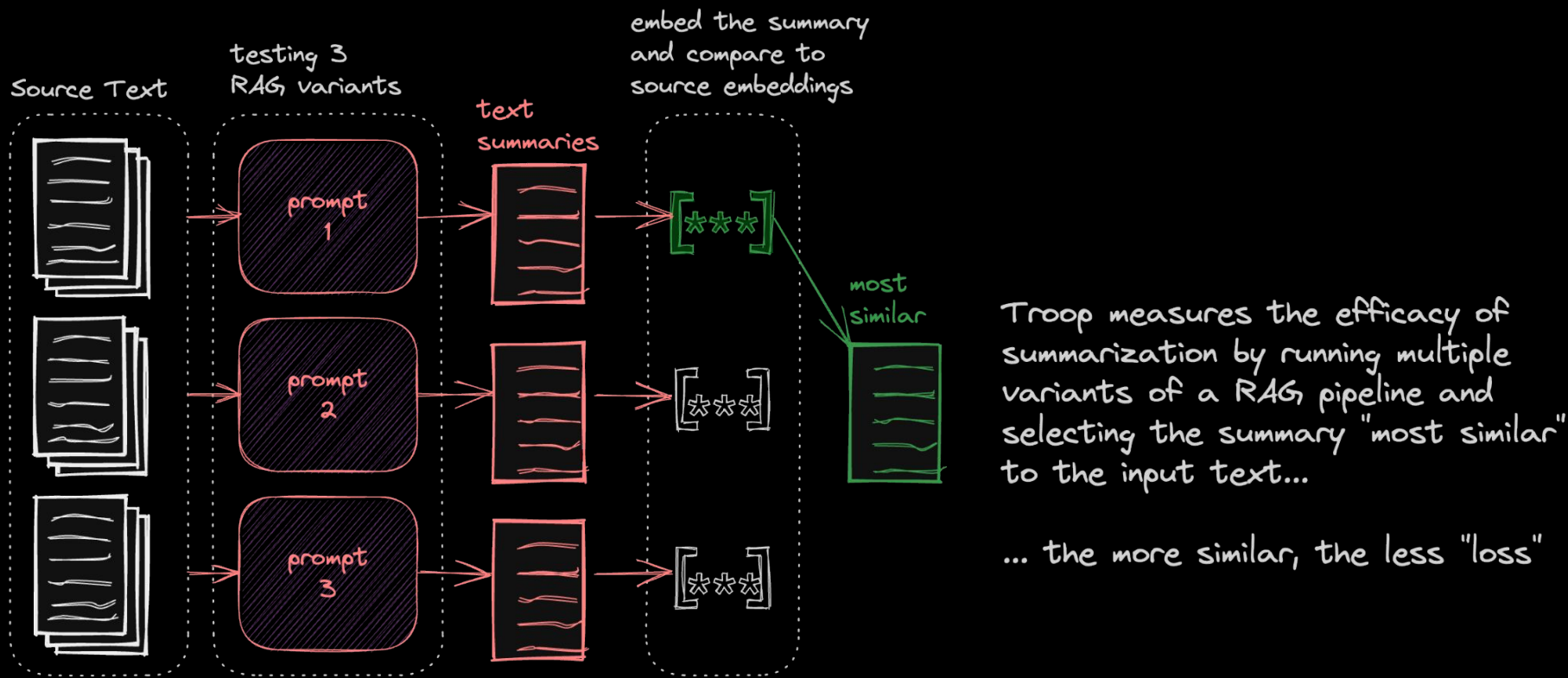
Ingesting & embedding big data



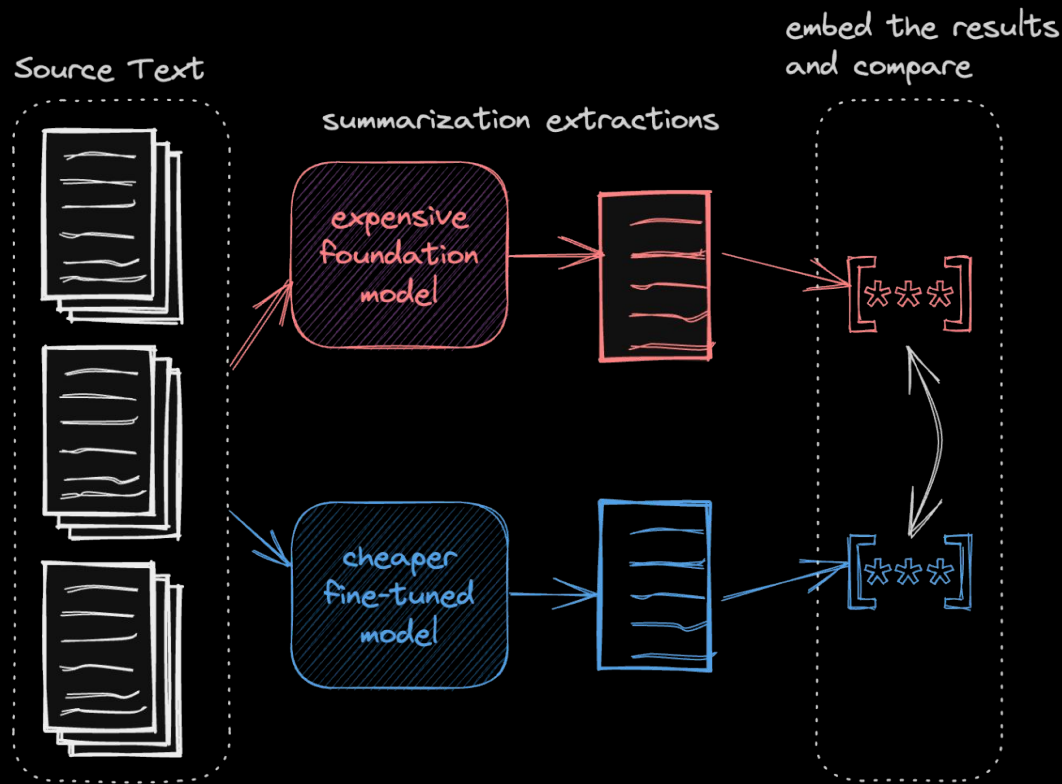
Scaling RAG with Milvus



evaluating "Black Box" extractions

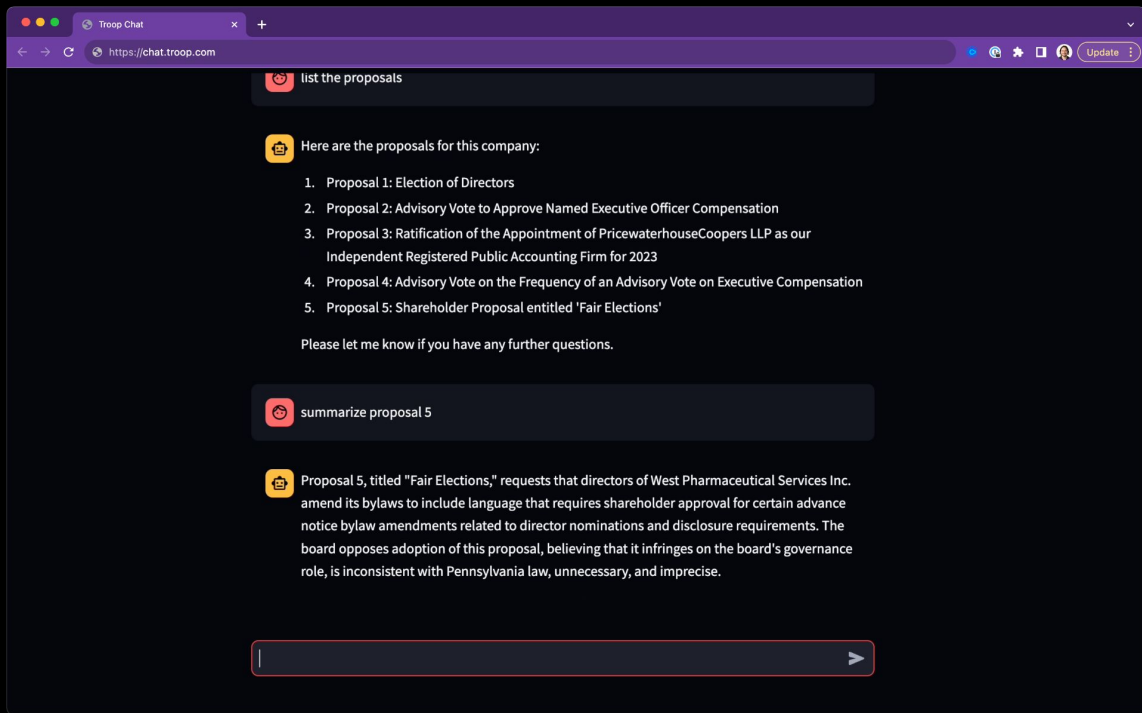


evaluating synthetic data with embeddings



Evaluating cheaper models by comparing the outputs to those of expensive models!

Data democracy with embeddings



The screenshot shows a web browser window with the address bar displaying "https://chat.troop.com". The page content is a chat interface with a dark background. The first user prompt is "list the proposals". The AI response is a list of five proposals for a company, followed by a request for further questions. The second user prompt is "summarize proposal 5". The AI response is a detailed summary of the fifth proposal, titled "Fair Elections", which requests bylaw amendments for shareholder approval. At the bottom of the chat window is a text input field with a right-pointing arrow.

Troop Chat x +
https://chat.troop.com

list the proposals

Here are the proposals for this company:

1. Proposal 1: Election of Directors
2. Proposal 2: Advisory Vote to Approve Named Executive Officer Compensation
3. Proposal 3: Ratification of the Appointment of PricewaterhouseCoopers LLP as our Independent Registered Public Accounting Firm for 2023
4. Proposal 4: Advisory Vote on the Frequency of an Advisory Vote on Executive Compensation
5. Proposal 5: Shareholder Proposal entitled 'Fair Elections'

Please let me know if you have any further questions.

summarize proposal 5

Proposal 5, titled "Fair Elections," requests that directors of West Pharmaceutical Services Inc. amend its bylaws to include language that requires shareholder approval for certain advance notice bylaw amendments related to director nominations and disclosure requirements. The board opposes adoption of this proposal, believing that it infringes on the board's governance role, is inconsistent with Pennsylvania law, unnecessary, and imprecise.

Thank you, Milvus!

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