Build a RAG-Powered Chatbot and Self-RAG Deep Dive

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Agenda

Part 1

Diving into Self-RAG

- What is RAG
- Limitations of RAG
- Intro to Self-RAG
- Insights into Self-RAG

20 min

Part 2

Building a Chatbot

Hands-on session on Google Colab building a RAG-powered chatbot using OpenAI embeddings to vectorize data, Rockset database for vector similarity search, and Streamlit for creating an interactive web interface for the chatbot.

40 min

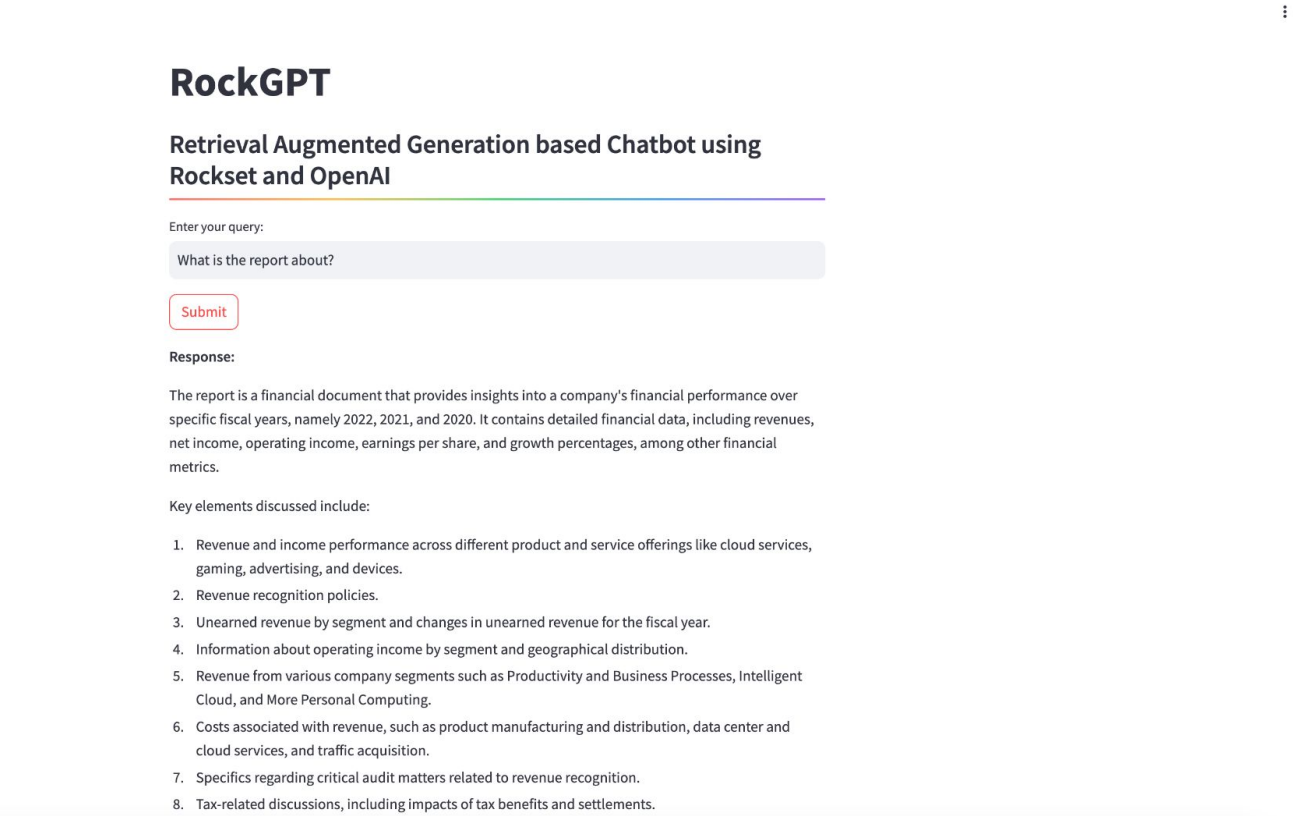
Part 3

Q&A

Ask away all your questions !

15 min and beyond

Output / Outcome



Conceptual Overview

LLMs	RAG	Self-RAG
Solely rely on internal knowledge ● Limited ● Not current ● Expensive training ● Not able to handle real-time stuff	**Supplementing LLMs with external knowledge** ● Reduces Hallucinations but what happens when: - knowledge base is lacking - prompt wasn't optimal - Retrieved docs not relevant	**LEARNING TO RETRIEVE, GENERATE, AND CRITIQUE THROUGH SELF-REFLECTION** ● LLMs decides if retrieval is needed ● Not a concat but a real critique before generation

RAG and Self-RAG

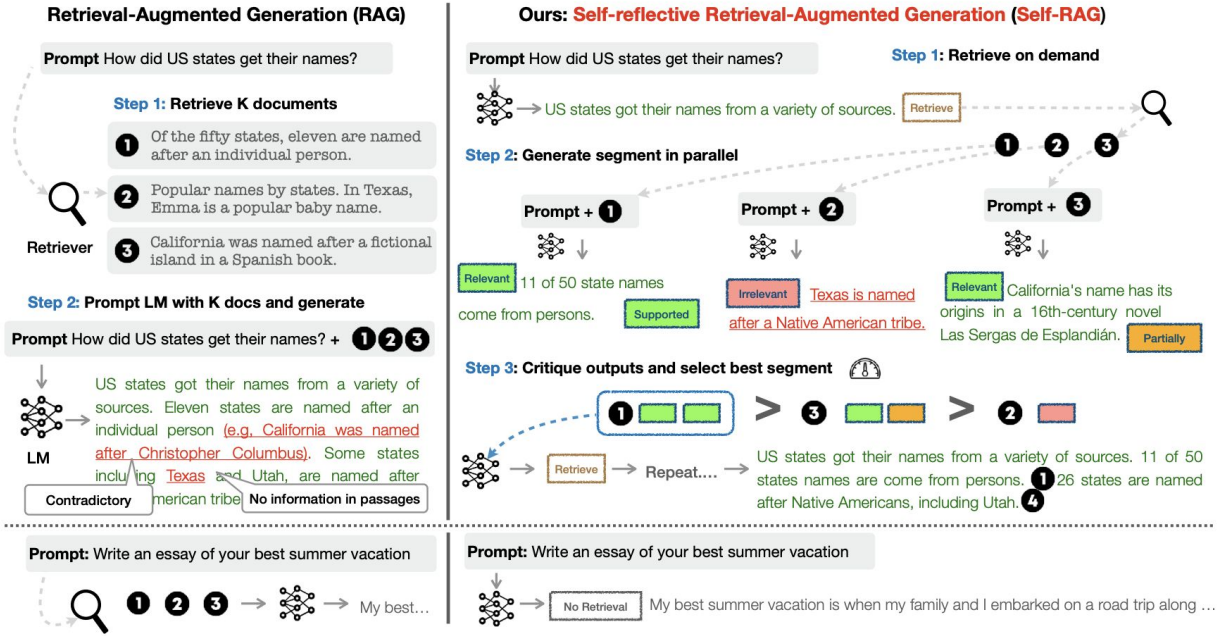


Figure 1: Overview of SELF-RAG. SELF-RAG learns to retrieve, critique, and generate text passages to enhance overall generation quality, factuality, and verifiability.

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