

Implementing Generative AI for Medical Standard Response Document Creation

As part of a partnership with a leading biopharmaceutical company, Clarkston's data science team leveraged cutting-edge Large Language Models (LLM) capabilities to streamline the creation of medical standard response documents.

The client recognized an opportunity to accelerate responses to Medical Information Requests (MIRs) through the use of LLMs and brought in Clarkston as experienced developers within that field. The first problem that the team addressed was taking the full history of MIRs and mapping them to a Standard Response Document (SRD), which both saves time and helps identify where the appropriate SRD does not exist. Next, the team moved to the more complex task of generating new SRDs. The process of creating these documents is labor-intensive and requires rapid responses for a variety of questions raised by healthcare professionals.

Using insights from subject matter experts, the team determined a corpus of documents to use as the base material for generating the standard response documents. The set of documents was used to create the knowledge base for a generative AI-powered tool created specifically for the task of SRD generation.

Through an iterative process, the Clarkston team built a tool that drafted complex and accurate standard response documents via a single business user prompt. The team also made recommendations for expanding the tool's capabilities through several chat platforms.

Life Sciences Case Study

PROJECT OVERVIEW

INDUSTRY:



Biopharmaceuticals

PRODUCTS AND SERVICES :



Antibody
Therapeutics

PRIMARY OBJECTIVES:

- Determine viability of GenAI solution for use in generating medical standard response documents (SRDs) derived from the company's collection of research and prescribing information documents
- Create drafts for medical SRDs that adhere to formatting and contain relevant, accurate information so that few changes are necessary prior to sending the documents to external physicians
- Develop a pipeline for business users to efficiently create and refine drafts with minimal need for prompt engineering experience

RESOLUTION:

- Created a chat model with a knowledge base consisting of a set of original research documents and prescribing information supplied by subject matter experts
- Developed a process of prompt engineering using a feedback loop with an existing LLM to leverage the set of existing standard response documents
- Clustered existing SRDs to determine the range of topic areas and perform formatting analysis specific to each area
- Created a set of instructions for the chat model aimed at maximizing the accuracy of information across multiple subject areas

KEY BENEFITS:

- Proof of concept pipeline that generates SRDs with no hallucinations and a high portion of expected content present
- A business user-accessible chatbot that can generate SRDs across a wide set of topic areas
- Demonstrated construction of a pipeline to categorize requests and create SRD by topic areas
- Recommendations for future expansion of the tool to improve robustness and alignment with business users' vision



KPIs

- Medical SRD first draft time reduced from a multiple-day effort to a single model prompt and response
- Generated SRD draft was determined by a business user to be adequately like content generated by a human
- An accelerated capability to make continued modifications and improvements to the model going forward due to comprehensive knowledge transfer

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