Revolutionizing Clinical Trial Design: Evergreen Therapeutics

Evergreen's pipeline consists of 10 programs, with 5 of them having entered clinical development stages of Phase I-III in the United States. Additionally, the company has filed more than 50 patent applications covering major global pharmaceutical markets.

About Evergreen Therapeutics:

Evergreen Therapeutics, Inc. is a global pharmaceutical innovator. The company is involved in the research and development of its own drug pipeline, focusing on the discovery of innovative drugs in the fields of ophthalmology, vascular diseases, and autoimmunity. Evergreen also provides innovative drug development services to other pharmaceutical companies. The company's AI computing platform supports the entire drug development life cycle, including the synthesis and optimization of novel molecules, pharmacological and toxicological prediction, and clinical trial design and management.

The Evergreen Therapeutics team is comprised of seasoned professionals with deep expertise in drug development, clinical medicine, regulatory affairs, corporate operations, and financial management. Their collective background includes significant R&D experience, regulatory knowledge from former FDA personnel, and a strong command of AI technology applications in pharmaceuticals.

The Challenge:
Overcoming Technical Hurdles

As part of Evergreen’s strategic focus on adopting generative AI to improve the efficiency of clinical trial design, its R&D team decided to invest in creating a tool that can automatically draft sections of Phase I and II, non-cancer clinical trial protocols. Experts would provide high-level guidelines and trial requirements, and the tool would reference published clinicaltrial.gov data along with relevant literature to produce sections of the clinical trial protocol. However, Evergreen lacks the technical expertise and an LLM-native foundational framework to develop such a tool.

The Solution

Evergreen partnered with GPT-trainer to develop their envisioned clinical protocol generator. GPT-trainer’s team first created an automated way to capture, synchronize, and self-host a database housing publicly accessible clinical trial data matching what is available on clinicaltrials.gov. The data was then indexed for search. The GPT-trainer team created semantic search over the inclusion / exclusion criteria, as well as regular keyword / Boolean search over other metadata fields.

Using GPT-trainer’s multi-agent framework and function-calling capabilities, Evergreen was able to gain on-demand access to synchronized and indexed repository of clean clinical trials data, as well as relevant research publications hosted by Semantic Scholar. Furthermore, GPT-trainer’s no-code UI allowed Evergreen to quickly iterate on system prompt design for AI-generated sections of the clinical trial protocol. Once the system prompts and associated trial requirements have been provided, GPT-trainer was tasked with generating sections of Phase I and II, non-cancer clinical trial protocols in a production environment. The result was then returned to Evergreen via API and served through a client-facing UI.

Due to latency and data privacy concerns, GPT-trainer deployed a separate instance of its system on a dedicated AWS server closer to Evergreen’s base of operations.