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PROJECT TYPE

Clinical trial search and management tool

TECHNOLOGIES

AWS S3, Docker,
Ruby on Rails - 7.0.3,
React - 18.2, React Native - 0.69,
PostgreSQL - 14.2, MaterialUI,
Twilio, SendGrid, MongoDB - 6.0,
Redis - 7.0.5, Sidekiq

DURATION

3 months

METHODOLOGY

Scrum

TEAM

3 Lead Developers
3 Backend Developers
1 Frontend Developers
2 React Native Developers
2 Project Managers
3 Business Analysts
2 Quality Assurance Specialists
1 UX Designer

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Industries: Healthcare
Region: USA

Clinical trial matching platform for enhanced patient recruitment

The transformative platform streamlining clinical trial recruitment with an AI-powered patient matching system. Integrates a user-friendly mobile app and a comprehensive sponsor dashboard, offering personalized trial recommendations, efficient trial management, and seamless ClinicalTrials.gov integration. Ensures HIPAA compliance and geographical convenience for patients.
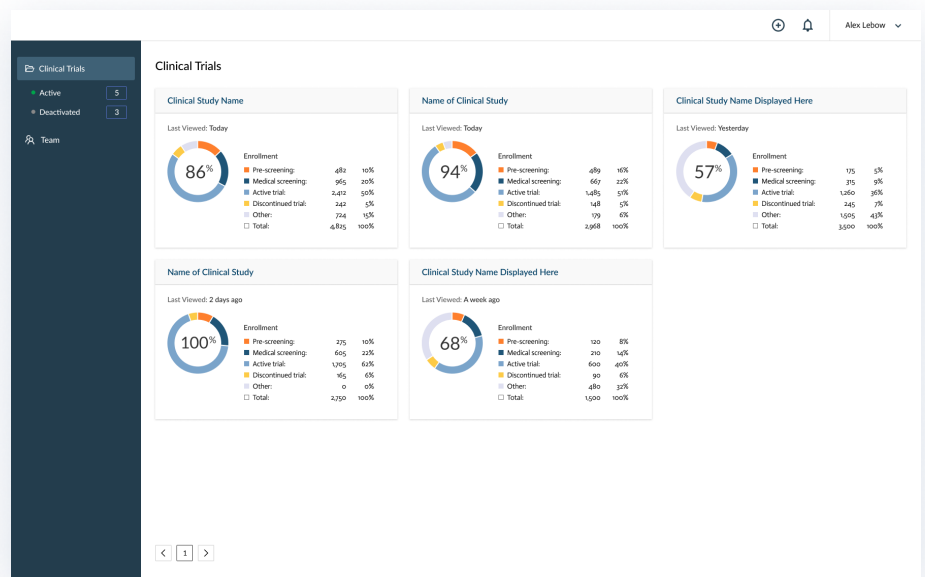
Project Special Features

Integrated clinical trial database – seamless integration with the ClinicalTrials.gov database for access to a wide range of clinical trials.

Machine learning matching mechanism – advanced AI algorithms to match patients with clinical trials based on their specific health conditions and preferences.

Web dashboard for sponsors and mobile application for patients.

Trial management – features for activating/deactivating trials, managing access, and viewing active and deactivated trials.

Two-factor authentication (2FA) – enhanced security feature to protect user accounts and ensure data integrity.

HIPAA compliance – adherence to healthcare regulations and standards for data security and privacy.

Geographic filtering in trial selection – incorporation of geographic location in the trial selection process to address travel limitations of patients.

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Business challenge

In the United States, the process of patient recruitment for cancer clinical trials is a critical yet challenging task. Traditionally, it involves clinicians manually screening patients to find suitable matches for trials, a process that requires in-depth knowledge of complex enrollment criteria, including clinical, radiologic, and genomic data. This manual approach is time-consuming and often inefficient.

The Client, a company operating in the healthcare sector, recognized the need for improvement in this area. Their objective was to accelerate patient recruitment by introducing an AI-based, automated screening tool. This tool is designed to determine patient eligibility for clinical trials quickly and accurately, aiming to reduce the workload on clinicians and streamline the process for both patients and healthcare providers.

Main challenge

The primary challenge for the Client was to simplify the process of matching patients with suitable clinical trials. The existing American clinical trial registry is extensive but not user-friendly, making it difficult for patients to find relevant trials without in-depth cancer knowledge.

Our goal was to create a system where patients could easily find trials suited to their specific needs.

Additional requirements

✓ The trial selection must consider factors like location to accommodate travel limitations.

✓ Adherence to HIPAA compliance for data security and privacy.

✓ Tough 3-month deadlines.
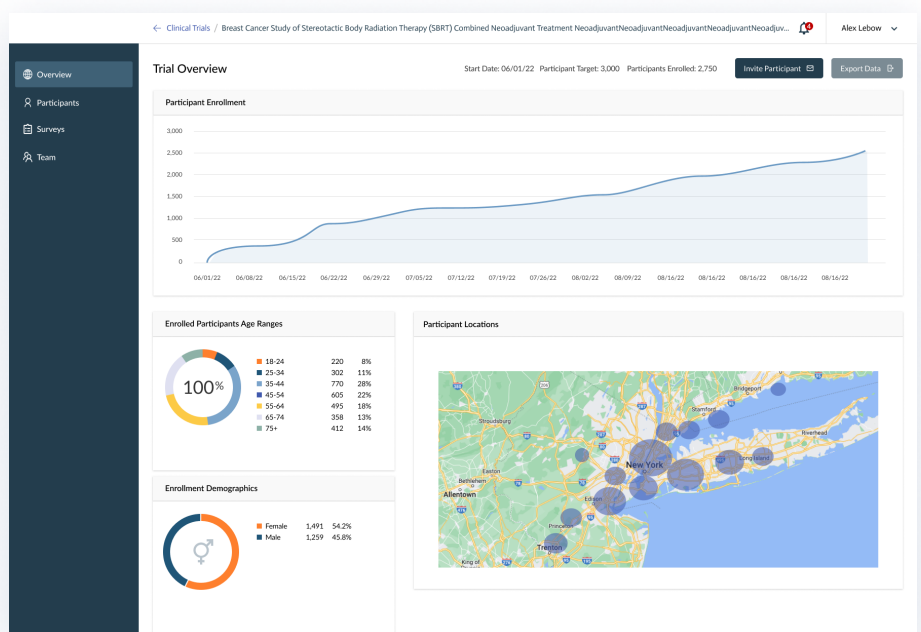
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Our solution

SumatoSoft developed a comprehensive solution for the Client, encompassing an integrated platform that links with the ClinicalTrials.gov database. This platform features a dual-component system: a web dashboard for sponsors to manage clinical trials and patient engagement, and a mobile application for patients, facilitating the search for suitable clinical trials.

We began with a thorough Discovery phase. Here, we identified the Minimum Viable Product (MVP) functionalities crucial for the platform's success. The initial phase focused on enabling patients to find and apply for clinical trials and allowing sponsors to view all enrolled patients. In the planned second phase, the aim was to facilitate the entire process of development and participation in clinical trials within the application, enhancing both user experience and operational efficiency.

Matching mechanism powered by machine learning

The user journey commenced with patients registering on the mobile app. Upon registration, they were prompted to complete a detailed questionnaire about their health conditions and specific cancer details. This information was pivotal, feeding into our machine-learning mechanism designed to identify and suggest relevant clinical trials. The list of trials was not static; it evolved dynamically, reflecting new trial availability and changes in patient health information.

Web dashboard for sponsors

Simultaneously, sponsors had access to a web dashboard. This dashboard was a robust tool for trial management, allowing sponsors to create new trials and oversee patient enrollment. Key features included the ability to activate or deactivate trials, manage access, and monitor both active and deactivated trials. The dashboard also facilitated the management of trial team members, ensuring efficient coordination and communication.
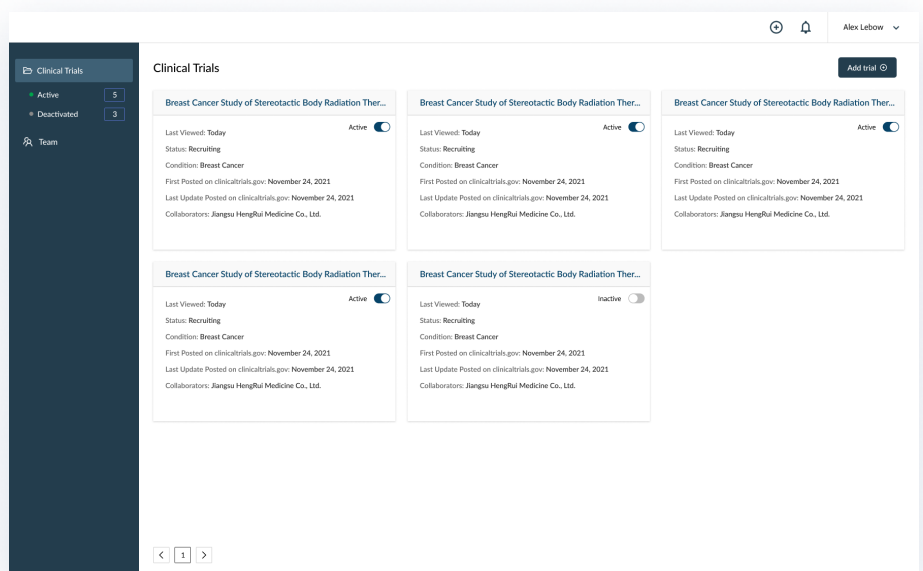
Mobile application for patients

Patients using the mobile app could browse through these suggested trials, access detailed information, and mark the ones they found most suitable. These selections were stored on a separate page for easy reference and ongoing consideration.

Throughout the development process, we navigated various challenges, including HIPPA compliance requirements, stringent deadlines and shifting Client priorities, which fluctuated between focusing on the mobile app and the web dashboard for sponsors. Despite these hurdles, we successfully developed the MVP features within a remarkable timeframe of just three months.
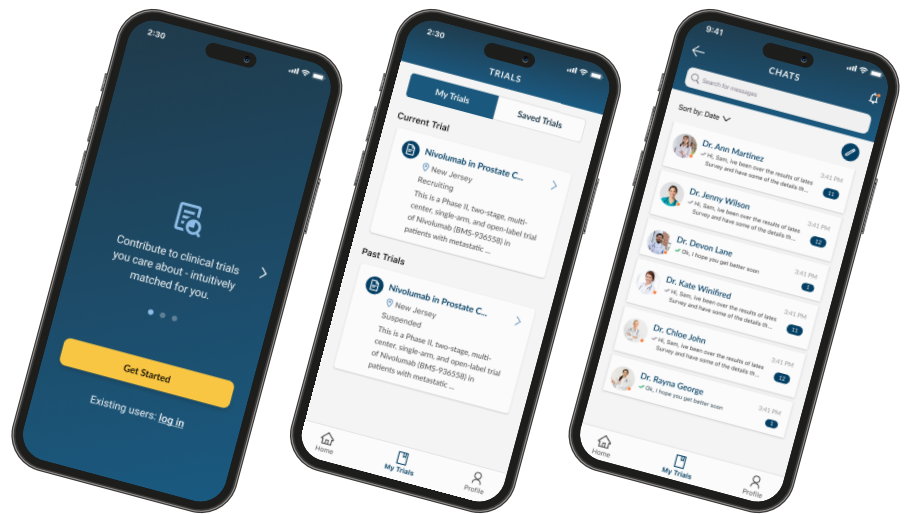
What's happening with the project right now?

The project's full potential remained unrealized, as the Client halted development due to internal reasons while integrating the machine learning mechanism into the system.