

IntelliCP - Utilizing Generative AI for Drug Reaction Analysis

Introduction:

IntelliCP is an application designed to streamline the analysis of drug reactions documented in various medical journals. The application extracts crucial data regarding drug interactions, side effects, and adverse reactions from medical literature and generates comprehensive case reports. Leveraging cutting-edge Generative AI technology, IntelliCP aims to revolutionize the way medical professionals analyze and understand drug reactions.

Challenges:

Before the implementation of IntelliCP, medical professionals faced several challenges in efficiently analyzing and synthesizing data from medical literature:

- **Time-consuming manual analysis:** Medical professionals had to manually go through extensive medical literature to extract relevant data on drug reactions, leading to inefficiencies and delays in understanding critical information.
- **Limited scalability:** With the exponential growth of medical literature, it became increasingly difficult for medical professionals to keep up with the vast amount of data and identify emerging patterns in drug reactions.
- **Risk of human error:** Manual extraction of data from medical literature was prone to errors and inconsistencies, potentially leading to incorrect interpretations and conclusions regarding drug reactions.

Solution:

IntelliCP addresses these challenges by leveraging Generative AI technology to automate the process of data extraction and analysis from medical literature. The application utilizes Large Language Models and advanced natural language processing to identify and extract relevant information regarding drug interactions, side effects, and adverse reactions from a diverse range of medical journals and publications.

Implementation:

- **Data Extraction:** IntelliCP automatically scans and extracts data from medical literature, including drug names, adverse reactions, patient demographics, and other relevant information.
- **Natural Language Processing:** The application employs sophisticated natural language processing techniques to analyze and interpret the extracted data.
- **Generative AI:** Utilizing Generative AI models, IntelliCP generates comprehensive case reports based on the analyzed data, providing medical professionals with actionable insights into drug reactions and their implications.

- **User Interface:** IntelliCP features an intuitive user interface that allows medical professionals to upload and process multiple documents simultaneously. The interface provides real-time updates on the status of document processing and allows users to review generated reports efficiently.

Technology:

- Backend - Python Django
- Frontend - Flutter
- LLM - OpenAI GPT 3.5 model
- Database - MySQL

Benefits:

IntelliCP significantly reduces the time and effort required for data extraction, allowing medical professionals to focus on interpreting insights and making informed decisions regarding drug reactions. With its automated data extraction and analysis capabilities, IntelliCP can efficiently handle all kinds of medical literature, enabling scalability and adaptability to evolving research trends. By leveraging Generative AI technology, IntelliCP minimizes the risk of human error, ensuring accurate and reliable insights into drug reactions. It generates comprehensive case reports that provide detailed information on drug interactions, side effects, and adverse reactions, empowering medical professionals with actionable insights for patient care and drug safety.