AI-powered knowledge discovery

Global pharma company saves 75% time and 60% effort with transformed scientific writing process

Client background

- **Client:** A multinational pharmaceutical company

- **Industry:** Pharmaceuticals

- **Core business:** Pharmaceuticals, diagnostics, animal health

- **Area of Operations:** Worldwide

A next-gen AI solution, jointly developed by Wipro and Ontotext, helps the pharma company achieve a 30-fold increase in efficiency in knowledge management

Challanges

The client wanted to create a smart knowledge discovery solution that would help their researchers find relevant information for analysis while creating a clinical trial synopsis document. This information was locked in huge volumes of data stored across various structured (proprietary or public registers) and unstructured (clinical study protocols and reports, etc.) sources. This made the researchers' task of finding the relevant information in all related clinical documents extremely difficult.

- The data was stored in different types of documents (clinical protocols, TFL, scientific articles, etc.) and in various file formats (Text, PDF, Scanned images, etc.)
- Information was provided with different level of details requiring high manual effort to find relevant information
- Ambiguous and duplicate information slowed down the process
- Overall authoring process required generation of unique content while keeping the original meaning intact

Solution

The smart AI solution jointly developed by Wipro and Ontotext helped the pharma company transform their scientific writing process. The solution consisted of automatic data extraction, definition of business rules, and natural language generation.

- **Automatic Data Extraction**
  - Advanced natural language processing pipelines to extract specific key categories such as introduction, method data (study design, study population, etc.) and result data (patient disposition, patient demographics, safety, etc.)
  - Custom built knowledge graph interlinked with the client's clinical trials public data
  - Semantic normalization of data to specific clinical concepts (treatment and conditions) for automatic generation of human readable text

- **Definition of Business Rules**
  - Application of business rules associated with medical information needs
  - Review of the extracted content and compilation as per the context

- **Natural Language Generation**
  - Application of data analytics to extract important facts and generate meaningful natural language summarizations for each knowledge category
  - Semantic normalization of high volume of documents to a manageable subset of relevant documents

Business Impact

With the smart scientific writing solution, the client's researchers can now efficiently integrate data from multiple systems, need less time to accumulate content for scientific communication, and can easily access high-quality data, including knowledge that was previously locked in data silos. All this, while minimizing costs and saving time spent on studies needed for product approval and registration.

- >75% time reduction

- 60% effort savings due to workflow automation

- 30-fold increase in efficient knowledge management

- Easy and standard access to high quality data with flexibility to cover large volume of data

- Effective integration of data from multiple systems

- Zero chance of missing out critical information

"Using the joint solution built by Wipro and Ontotext, we transformed the client's scientific writing process by saving more than 75% of time, significantly reducing manual efforts, and empowering the scientific writing experts to deliver high-value analysis documents. This solution will help our pharma clients turn the data they've accumulated over decades into one of their greatest assets."

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