Natural Language Search for Pharmacovigilance

Once a pharmaceutical drug is in the market, its manufacturer is expected to review all news that relates to it and report any adverse events to regulatory bodies. A prerequisite element of this review is to distinguish reports that contain real adverse events from those that do not. Pharmacovigilance, as this activity is called, is a big headache for drug companies esp in the US.

Unfortunately, adverse event reports vary in the amount of information that can be provided or is known and there is rarely certainty that a reported event is adverse. What may at first appear to be an adverse event report can turn out to actually be something quite different.

The top 5 pharma companies each employ 250+ scientists for adverse events compliance. Cognitive automation can make them highly productive.

For example, companies often receive reports of drug-drug interactions, or studies in which their drug has been tested alongside another, newer drug. A lot of the time these reports detail a successful study containing no adverse events at all. Other times, they do discuss adverse events, but the events are associated with a different drug owned by a different pharmaceutical company.

Indeed, less than 1% of reports pharmaceutical companies review contain actual adverse events related to their own drugs that need to be forwarded to the regulator.

What compounds this problem is scale – the world talks about drugs *a lot*. A single postmarket drug can generate hundreds of reports, from media articles and consumer feedback to studies conducted by doctors and health officials. And all of these need to be separated into two piles: adverse and non-adverse. That a task as simple as separating reports that do contain adverse events from those that don't can divert the workflow of hundreds of scientists at a single pharmaceutical is mind-boggling.

"It is not as simple as finding the right keywords. There are a lot of nuances in successful classification of any report as an adverse event. Some times the adverse event is expected. Other times it has already been reported and is known. Many reports talk about events related to multiple drugs, and it becomes important to understand the details." - Senior Physician

There is currently a shortage of over seven million physicians, nurses and other health workers worldwide. Rather than filing an endless stream of paperwork, healthcare professionals would be much better put to use exercising the unique capabilities and skills that are in such short supply: finding cures, researching new drugs, improving people's health.

While there is nothing pharmaceuticals can do about postmarket regulatory compliance, they can make the process of reporting adverse events less time-and-resource-expensive.

Artificial Intelligence technologies have been making fantastic progress in the healthcare sector in recent years, solving a variety of problems for patients, hospitals and the industry overall. Doctors can now use AI to identify skin cancer, fight blindness and diagnose sleep-loss disorders. But so far there is nothing that can help pharmaceuticals resolve the conundrum of adverse event classification.

This is why we at Coseer are putting our Cognitive Computing AI to the task.

Cognitive Computing is the branch of artificial intelligence that specializes in automating workloads built on unstructured datasets. Cognitive Computing takes big data analytics to the next level (i.e. cognitive analytics) by applying machine learning algorithms and natural language processing to make sense of vast quantities of data, much of which is unstructured, to improve data-driven discovery and decision making.

We have already developed a perfect cognitive algorithm that can automatically distinguish reports that do contain adverse events from those that don’t. Reports that do contain adverse events can be flagged as requiring compliance and sent to the relevant professionals. Reports that no longer waste highly-valuable professional time.

In the realm of data and cognitive analytics, one rule is king: the more clean, reliable data available, the more accurate judgments can be reached. With cognitive automation, pharmaceutical companies can now guarantee that they capture data on all adverse events reported, whether in the scientific literature, journals, media reports, postmarketing clinical investigations, postmarketing epidemiological studies, or even unpublished scientific papers.

We believe such an algorithm will help healthcare companies complete the regulatory filing of adverse events related to postmarketing drugs more comprehensively and faster than ever before.

We also believe it will improve the quality of pharmaceutical drugs on the market, by allowing

healthcare companies and regulatory bodies like the FDA quicker access to relevant information from a greater range of sources.

By automating simple but time-consuming tasks like adverse event classification, pharmaceutical companies can free employees to focus on more complex and value-added work. Start your cognitive journey by requesting a demo today.

What is Next-Generation Enterprise Search?

Coseer's search solutions are transforming industries from healthcare to finance. Our point-and-shoot AI trains finds answers and insights with 95%+ accuracy within 4-12 weeks - all of this in 100% security. The reason? We founded Coseer on the principle that computers should take care of the boring stuff so that humans can focus on creativity and judgment. To that end, we've built enterprise search solutions to complete complex workflows just as humans would in a fraction of the time. Fortune 500 leaders are using Coseer to speed up and automate their most complex work.

We follow a tactical approach to enterprise search:

- We deliver 95-98% accurate solutions within 4-12 weeks.
- Our solutions deploy entirely behind your own firewall for 100% security, and every decision point is logged for full transparency.
- You add the finishing touches, but our point-and-shoot AI practically trains itself. No more huge training data sets or time wasted annotating and tagging.

Visit our website for in-depth case studies, ROI breakdowns per industry, and other insight.