



CASE STUDY: Perfect Search in Healthcare

The Problem

The healthcare industry today is faced with the daunting challenge of dealing with the large volume of medical data that's being generated on a daily basis—not to mention all of the historical data. The industry is clamoring for solutions. Whether this data comes from electronic medical records, medical transcription records, digitized notes, or paper forms, there are no real solutions in the healthcare space that allow users to effectively mine and utilize this vast amount of data.

Medical organizations are being pushed towards digitization. In most cases, this equates to the implementation of electronic records management systems and integrated health information exchange networks. In theory, these solutions provide the healthcare industry with the tools needed to more effectively manage patient care, facilitate reporting, and maximize efficiencies. The problem, however, is that many of these systems force clinicians to utilize new work flows, limit the information being entered to a series of drop down boxes and form fields, and, in many instances, do not provide the ability to work with existing historical data.

One of the primary drivers behind a move towards digitization is the federal funding that's available. With deadlines mandated, these funds are being provided to incentivize and assist medical organizations in making the shift to digitization and "meaningful use." In light of this, it's understandable why these organizations are interested in pushing ahead despite the weaknesses that are inherent in the current technology solutions.

The Solution

An ideal healthcare IT solution would be one that is able to produce structured EMR data, while also taking into consideration and utilizing existing workflows to digitize medical information and make it readily available for recall across multiple disciplines and locations. Perfect Search Corporation has worked in conjunction with NLP International to produce such a solution.

Natural Language Processing (NLP) is the ability for a computer to read, process, understand and extract unstructured clinical information just as a clinician would from any free text medical report.

MedLEE™, a best-in-breed NLP technology, turns unstructured, dictated medical narratives into easily retrievable accurate data to support multiple healthcare systems in the hospital to enhance patient safety, quality assurance, diagnosis/prognosis support, billing and reimbursement administration—all while utilizing existing physician work flow.

Spearheaded by Columbia University, the MedLEE platform was researched, developed and field tested over a 20 year period at Columbia University. MedLEE is patented, highly modular, and covers multiple medical domains. It is the most extensively deployed, most referenced and most widely published Natural Language Processing engine commercially available.

When the MedLEE platform was perfected and ready for deployment, the problem it faced was that processed data can be over four times larger in size than regular data, thus making data mining and commercialization extremely difficult. While the solution was extremely powerful, the amount of hardware required to make it usable and efficient also made the solution too costly for the majority of organizations.

NLP International searched for and evaluated a wide array of search technologies to power the MedLEE platform, ranging from high-end Microsoft FAST to open source Lucene. Because of the volume, complexity and size of the MedLEE output data, NLP International had been unable to identify a search technology partner that could cost-effectively handle the data. This was prior to NLPI's introduction to Perfect Search Corporation.

“By leveraging Perfect Search's federated search technology and MedLEE's output, the combined solution has created the first true Semantic Search and Retrieval Solution for healthcare that will revolutionize the way we use clinical data.”

*-Kyle Silvestro, VP Corp Strategy
NLP International*

NLPI was able to leverage Perfect Search's unique, unrivaled capabilities: the ability Perfect Search has to connect to both structured and unstructured business critical data—doing so exponentially faster than other solution on the market, and the ability to operate on 90% less hardware. NLP International was able to commercialize this valuable technology.

The Result

The result of this partnership is an expert tool that enables research physicians, hospital administrators, and clinicians to easily create and run ad hoc queries against millions of complex medical records and get results back in under a second. This is a dramatic improvement over the process today, which is to run specialized queries through the IT department, hoping to receive results in hours, if not days.

Perfect Search puts critical data in the hands of those who need it, doing so exponentially faster than anyone else on the market. And, with 75% of organizations taking “green” solutions into consideration as they shop for IT solutions, the ability Perfect Search delivers to run on 90% less hardware also delivers significant “green”-related ROI—far less hardware equates to far less power, cooling and maintenance.

Perfect Search is faster, more accurate, and has the smallest IT footprint of any search technology in the industry. Perfect Search is the search engine to power next generation of healthcare IT solutions.

About Perfect Search Corporation

Founded in 2007, Perfect Search Corporation is an enterprise search solution delivering 10 to 1000 times faster and more scalable search across exponentially growing data sets. Through software innovation, the company enables the world's fastest search, requiring far fewer hardware resources, so companies can quickly and cost-effectively access and use information from structured and unstructured data sets all across the enterprise. Offering both search engine SDK for OEM and search appliance solutions, Perfect Search enables enterprises to find the information they need when they need it. Learn more at www.perfectsearchcorp.com.