

Linguamatics in Healthcare

Empowering Knowledge Discovery

Linguamatics enables organizations to maximize the value derived from textual information resources through its innovative NLP (natural language processing) based text mining and knowledge discovery platform. Our award winning platform, I2E, is used successfully by major organizations such as global pharmaceutical companies, healthcare providers and academic institutions.

Facing the Information Challenge in Healthcare

Every healthcare organization aspires to world-class healthcare at an affordable and sustainable level. A critical aspect of this is having the key information to hand in order to make the right decisions, whether they relate to an individual patient's treatment, more effective treatment strategies for specific disease areas, new clinical research projects, or simply applying the right codes for billing purposes.

Electronic patient records contain some well structured and coded fields, but much of the important knowledge is buried in physician notes, recorded as blocks of unstructured text in hundreds of thousands to millions of different patient records.

How can this rich and untapped source of knowledge be accessed effectively to support a range of different healthcare-based applications?

Example use cases:

- Research projects looking at retrospective bodies of data collected across a patient population to study, understand and model health outcomes
- Real time monitoring of patient data to understand trends
- Segmenting of patient populations by specific disease characteristics to determine suitable cohorts for clinical trials
- Supporting a translational medicine approach - linking patient data back to the scientific literature to gain a deeper understanding of disease and treatment mechanisms

How Linguamatics Helps You

Linguamatics' high performance text mining platform, I2E, allows healthcare providers to identify, extract, synthesize and analyze relevant facts, connections and correlations from unstructured or semi-structured textual information with precision and at scale, radically improving speed to insight. Its NLP-based methodology interprets the meaning of textual information far beyond the capabilities of a standard keyword search engine. I2E can answer questions that would be impossible or intractable using traditional methods.

The results, in the form of extracted facts and relationships, are produced in real time, with the information presented in easy to use structured tables and charts, where users can drill down and create visual mappings and networks to aid faster analysis and better informed decision making.

- I2E can identify subtleties in language, such as the difference between "history of cancer", "family history of cancer" and "no history of cancer"
- I2E can identify numerical information in context, for example dosages of specific drugs or drug combinations and the conditions they are treating
- I2E can identify, cluster and categorize by different concepts and classes, using plugged in terminologies, thesauri or ontologies, for example breast cancer and all its synonyms, or any type of cancer. Any terminologies can be used, such as ICD or Snomed
- I2E's structured results table can be connected and merged with other structured data, whether from a relational database or from other I2E results



How You Can Benefit

Linguamatics' healthcare solutions can provide dramatically improved speed to insight, resulting in time and cost savings for healthcare providers, hospitals, insurers, academic and research organizations and pharmaceutical companies. Use of the Linguamatics' text mining platform enables companies to make better decisions faster, with the very tangible benefits of higher return on investment, greater accuracy of results and improved effectiveness of analytical and research efforts. Organizations have realized up to a ten-fold speed-up in the time it takes them to extract actionable meaning from unstructured data, such as physician's notes, compared to more traditional search and research methods. Benefits are realized across entire teams, as well as at the level of an individual executive, analyst or informatician. The platform enables the automation of previously manual, repetitive tasks, making users much more productive and freeing them to focus on more sophisticated querying strategies.

About Text Mining

A large proportion of scientific knowledge is only available within text. This may be scientific papers, internal reports, patents, news feeds or text fields within semi-structured data such as medical records or electronic lab notebooks. Given the unprecedented and continuing increase in available textual information, new ways are required to extract relevant, decision-critical information to inform commercial and academic research and development.

Over the last decade, improved search technology has given scientists more tools to search for relevant documents. However, key information may be in lower ranked documents, and scientists can fail to make connections where information is spread across multiple documents, such as medical records or scientific literature. Advanced text mining technology has recently emerged as an automated solution for extracting and connecting information from various information sources at large scale. The technology has been making a large impact in life sciences, for example in pre-clinical safety, systems biology, and target selection.

Text mining systems have the ability to analyze unstructured or semi structured text and derive concepts, structure and relationships from it. It is an alternative approach to

traditional search engines using keywords in documents as a way of finding information. Text mining interprets the meaning of the text.

About I2E

I2E is an agile, scalable, high performance text mining system that aids organizations in discovering and synthesizing knowledge from unstructured text in large document collections. It has a proven track record in delivering best of breed text mining capabilities covering a broad range of application areas. Its agile nature allows tuning of query strategies to deliver the precision and recall you need for your specific task, at enterprise scale.

There is a choice of ways in which you can connect to I2E's unique capabilities: either by deploying I2E Enterprise in-house, or via I2E OnDemand, our Software-as-a-Service (SaaS) version of I2E.

About Linguamatics

Linguamatics enables organizations to maximize the value derived from information resources through effective deployment of innovative natural language processing (NLP) based technology. The versatile semantic knowledge discovery system, I2E, helps organizations to do much more than simply cope with vast quantities of information. Its unique combination of search and text mining enables organizations to turn this information into a competitive advantage. From life sciences and healthcare to business intelligence, from media analysis to security, users mine large collections of documents, extracting, analyzing and synthesizing relevant facts, relationships and quantitative data from content such as scientific papers, news feeds, patents, or internal reports.

Linguamatics has a rapidly growing user community with I2E deployed at 9 of the top-10 pharma companies. The company was founded in 2001, and is based in Cambridge, UK.

Contact Us

For further information, please email enquiries@linguamatics.com, call or write to us at the address below.