Your quest for an intelligent text-processing solution is over

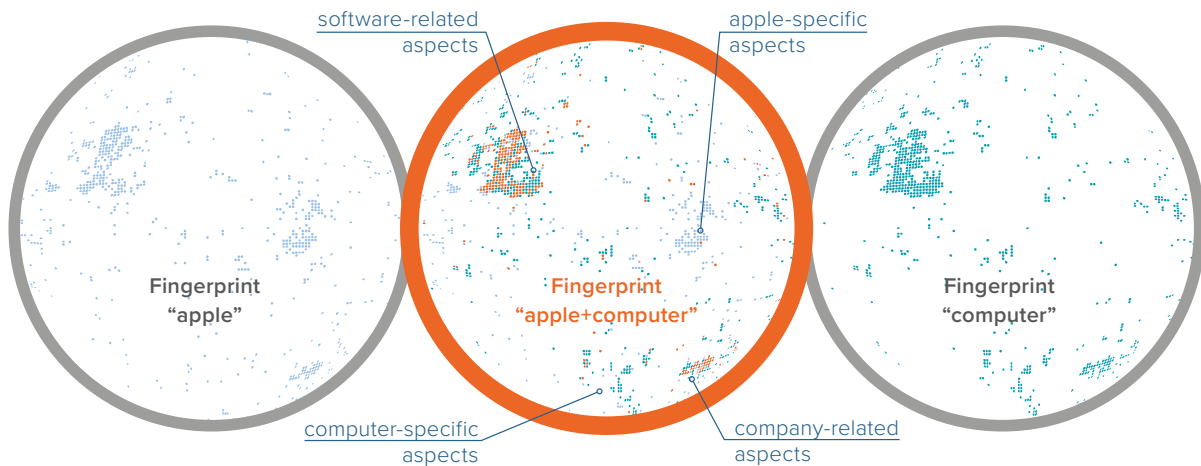Biologically-inspired natural language understanding

cortical.io

1 unique technology inspired by the brain

Cortical.io's Retina Engine is based on the patented Semantic Folding theory, a statistics-free processing model that, like the brain, uses similarity as a foundation for intelligence.

The Retina Engine converts text information (words, sentences, paragraphs, or even whole documents) into a semantic fingerprint—a numeric representation of its content including all senses and contexts. Semantic fingerprints can be easily compared by just measuring their overlap. The theory behind the Retina Engine differs fundamentally from other machine-learning approaches. In fact, it overcomes their limitations.

With Semantic Folding:
- words, sentences, and whole texts can be compared to each other
- the computation of complex NLP operations is highly efficient
- the system only needs small amounts of training data and is easy to debug

software-related aspects

apple-specific aspects

Fingerprint "apple"

Fingerprint "apple+computer"

Fingerprint "computer"

computer-specific aspects

company-related aspects

- **Patented technology**
- **Based on neuroscience**
- **Understands the meaning of text**
- **No large training data sets required**
- **High-speed semantic processing**

How we work

We implement a customized intelligent solution adapted to your business case in 5 steps:

1 **Technology Introduction**
2 **Exploration Workshop**
3 **Proof of Concept**
4 **Pilot Project**
5 **Rollout**

5 steps to your big-data semantic application

The fundamental theory underlying our technology makes it possible to develop solutions to natural language understanding (NLU) challenges that other approaches cannot solve properly. Whether you want to search a repository of texts in different languages, monitor millions of emails every day, or detect topics in social media in real time, Cortical.io can develop a highly customized solution that exactly matches your requirements.

Our unique approach enables a fast, transparent implementation, with first results delivered very quickly and at low cost. Our system is easy to debug and tune by your domain experts, making expensive trial-and-error processes obsolete. The precision of our algorithm drastically reduces the number of false positives and contributes to lowering your operational costs.

1 technology, a myriad of solutions

The Cortical.io technology is implemented in many domains to solve different challenges. What these challenges have in common: they could not be properly solved with other NLU solutions.

Cortical.io delivers highly customized solutions that exactly match your requirements. Our Retina technology easily scales to any business domain, use case, or language. You can use it to locate documents, find web content, match people, identify products, monitor your competition, track customer satisfaction, discover new knowledge, and much more. The range of business applications is truly overwhelming—from social media monitoring to enterprise search via information discovery, profile matching, forensic text analytics, or compliance monitoring.

Contract Intelligence

Automate the extraction of key information from contracts and other legal documents

Customer Intelligence

Extract topics from different data sources and determine customers' intents

Support Intelligence

Search previously solved support cases to quickly solve new, similar customer requests

Social Media Intelligence

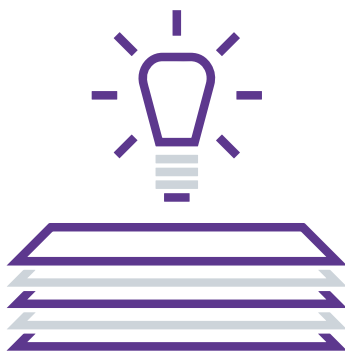Monitor in real time what customers are saying in social media

Search Intelligence

Find documents based on meaning and search terabytes of data, orders of magnitude faster

Data Intelligence

Improve your data analytics models with intelligent clustering and automatic classification

- **Used by several Fortune 100 companies**
- **Quick implementation, fast results**
- **Easy adaptation to any business domain or language**
- **Significant reduction in document-processing costs**
- **High semantic precision**

A search engine that understands natural language

Cortical.io Semantic Search Engine makes it possible to find the exact information you are looking for, even if you don't formulate your query precisely. It accepts words, sentences, paragraphs, or even whole documents in natural language.

Even if you miss keywords and use alternative words to express a concept, you'll still find what you're looking for. The engine uses our unique semantic fingerprinting technology to instantly compare your search query with millions of stored documents and returns the relevant information ranked by similarity of meaning. Whereas other approaches require longer periods of training, our system is trained in a matter of days, in a fully unsupervised manner, and can easily be extended to any language or business domain.

Example Use Cases:

Support Intelligence

Client: Network manufacturer

Goal: Reduce the manual effort required to resolve support requests by 50%

Solution: - Creation of a custom Retina based on existing support cases and product documentation
- Removal of background noise in text by using semantic fingerprints as filters
- Implementation of an online learning system that learns from user feedback in real time
- Automatic identification of new vocabulary through synthetic fingerprinting
- Autosuggestion of topics to improve support-request summaries

Result: 70% reduction in average handling time of support requests

Contract Intelligence

Clients: Major banks, accounting firm

Goal: Automate extraction of key information from contracts and other legal documents

Solution: - Processes all types of legal documents: contracts, credit agreements, lease agreements, ISDA master agreements and annexes, bond indentures, amendments, certificates, approval notes, letters, etc.
- Extracts defined entities (for example, dates, amounts, and ratios), relations between these entities, whole clauses, and data from tables
- Uses a combination of supervised and unsupervised learning, whereby annotation by subject-matter experts (SMEs) is minimized
- Is optimized for accepting and processing SME feedback

Result: 80% reduction in manual review and data extraction time

About Cortical.io

Cortical.io offers natural language understanding (NLU) solutions based on Semantic Folding, a theory that opens a fundamentally new perspective on the handling of big-text data. Inspired by the latest findings on how the brain processes information, the Cortical.io Retina Engine converts language into semantic fingerprints, numerical representations that capture meaning explicitly.

The uniqueness of the Cortical.io algorithm makes it possible to solve many open NLU challenges, like meaning-based filtering of terabytes of unstructured text data, real-time topic detection in social media, and semantic searching through millions of documents across multiple languages.

Cortical.io was founded in 2011 in Vienna, Austria, and holds a broad general license for Numenta's Hierarchical Temporal Memory technology.

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