



SearchUnify's Cognitive Technology and Artificial Intelligence



www.searchunify.com

Understand the Real AI

AI is a buzzword that you have been hearing a lot about & trying to figure out the applications within your enterprise that use AI.

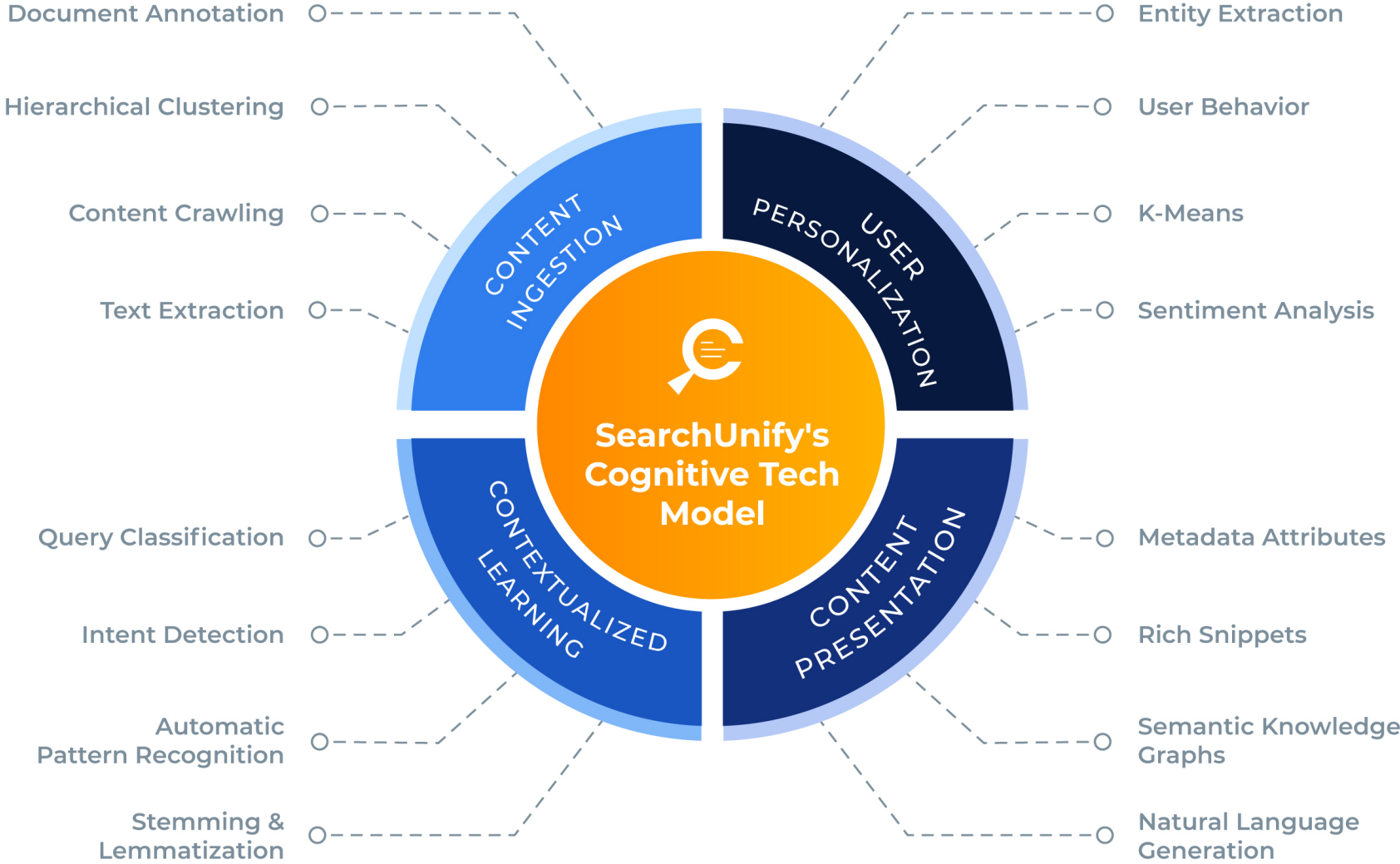
First thing to understand is that AI is not just one technology but a combination of many, like neural networks, NLP, computer vision, predictive analytics, and so on. Essentially, it augments human beings by making some logical decisions. It uses a set of complex neural algorithms. Cognitive technology also uses a certain subset of the technologies that AI does, but the key difference is that cognitive technology mimics the end-user human behavior in order to create options that otherwise humans would take. It helps humans in making the right decisions. For example, in a support console that's powered by cognitive technology, it helps the support agent by providing him/her with the right set of knowledge articles, experts, and advice on what he/she should be doing to resolve the issue and close the ticket fast.

SearchUnify's Cognitive Technology

SearchUnify is a unified cognitive platform built on a core of **cognitive technology**, **machine learning**, and an **insights engine**. It powers an intelligent search engine & AI-based applications that help elevate customer support & self-service.

It first unifies enterprise data scattered across disparate content sources and indexes it. Then, it leverages machine learning algorithms that analyze every user search query along with analyzing signals and patterns from the user's profile, journey, purchase and search history, and other users' search behavior to understand the user query well in its context.

Using these insights and learning from historical usage analytics data, it automatically surfaces the most relevant and hyper-personalized results on the top, which leads to the best outcomes – customer self-service success and agent efficiency, for example. Apart from automatically elevating users' search experience by always bringing the most relevant search results at the top of the first page, SearchUnify's ML algorithms also provide proactive recommendations with minimal effort from the user.



How SearchUnify Leverages Cognitive Technology & Machine Learning

From understanding a query to providing answers, there are a number of steps that are performed. SearchUnify ingests, classifies, comprehends, tunes, and then presents data – and it leverages a bunch of machine learning algorithms at each of these steps.

01. Data Ingestion

As part of the content ingestion process, NLP leverages text extraction & mining to identify rich snippets and extract metadata, which are then stored in the search indices. Whatever content manipulation is performed before the crawling of the content is fed into the index by the parsers.



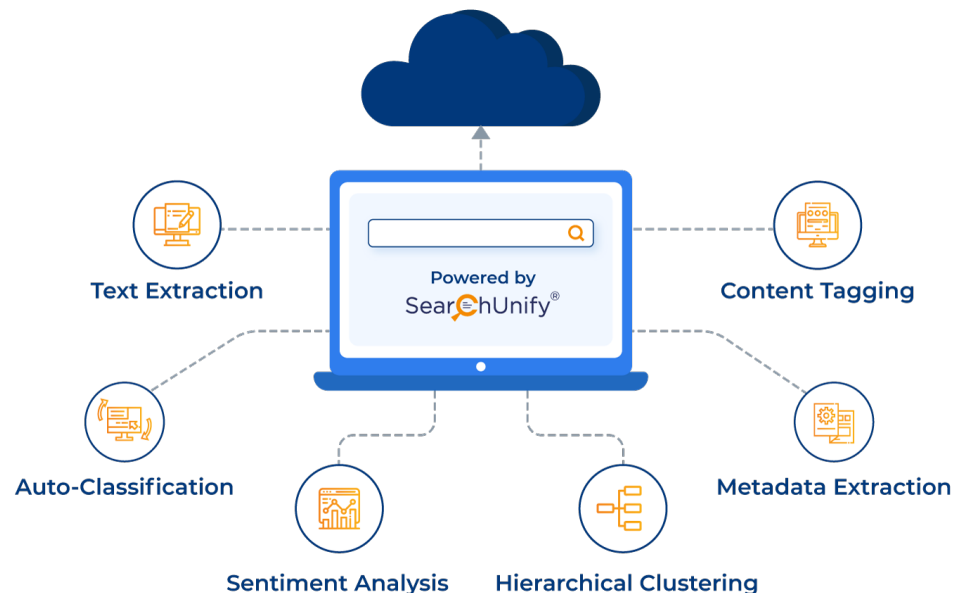
SearchUnify's auto-classification models work on ML Techniques like K-Means and Hierarchical Clustering to aggregate content with similar traits and categorize it.



SearchUnify deploys ML models to perform document annotation with ML-generated metadata fields to address the taxonomy problems due to the inconsistency of tags across different content sources.



It performs Sentiment Analysis on the incoming support tickets to predict the likely-to-escalate cases to alert the admins and support managers about them.



02. Intent Detection

SearchUnify's ML algorithms learn from the user's profile, preferences and historical searches to extract entities from the content, and better understand the context with time. These algorithms ensure that the search engine doesn't just read keywords to show results, but understands the intent of the searcher to show results that they are looking for. And that makes the difference between a search engine and an intelligent search engine.

It majorly employs the following algorithms at this stage:



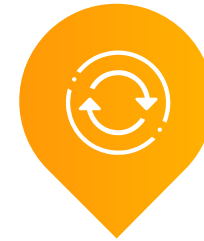
QUERY CLASSIFIER

SearchUnify classifies each query as a question or information and accordingly displays the first result as a step-by-step single answer or a list of results, respectively.



INTENT DETECTOR

SearchUnify maps queries against intent training on its Intelligent Chatbots to map the user input to recognize the intent & classify the message for an appropriate response.



PATTERN RECOGNITION

ML-based algorithms like Auto Boosting, Auto Facet Interpreter, and Auto corrections are applied to search query to bring personalized search results based on user's intent.

03. Relevancy and Hyper-Personalization

Its ML models leverage input signals like user profile, search history, CTR – from the user data and search query to understand the query precisely in its context. NLP algorithms help with stemming, lemmatization, identifying synonyms, spell correction and query classification. It leverages the user profile data, access permissions and the historical browsing behavior for personalization. Click Boosting Rate tunes more popular documents ahead of their less popular counterparts.

In addition to AI technologies, SearchUnify also takes into account manual tuning configurations like boosting based on the documents usage rate, articles sharing rate and recency of the content.

To show a single answer, SearchUnify leverages NLG. Rich snippets populate a summarized view providing accurate & targeted metadata on the search results page. SearchUnify builds a Semantic Knowledge Graph, where one can find all the relevant knowledge pertaining to the search query at one place.



Experience the Real AI

Just like gold, every automation is not AI. Real AI is a lot more than mere automation. It's a mix of multiple cutting-edge technologies. Therefore, before investing in any tool or app that claims to be AI-powered, you want to know how it leverages those technologies.

Leading global enterprises have leveraged SearchUnify's unified cognitive platform and next-gen applications to elevate customer experience and agent experience and realize the following benefits:

- **Revolutionized Information Discovery**
- **Proactive and Predictive Personalization**
- **Superior User Experience for Customers & Employees**
- **Proactive Decision Making with Real-time Insights**
- **Higher Support ROI and Self-Service CSAT**
- **Superior User Experience for Customers and Employees**

We hope this document helps you understand how SearchUnify leverages cognitive technology and machine learning models to understand a query and deliver relevant results.

AI is ubiquitous. But, not many organizations can harness the power of cognitive search. If you're interested in reaping the maximum benefits of a cognitive platform, then hot-wire your enterprise ecosystem with SearchUnify.

To see it live in action, please request a demo today.

Contact Us



www.searchunify.com



info@searchunify.com



USA +1 650 603 0902

India +91 987 854 2223

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