AILANI - Your scientific assistant for COVID-19

Your scientific assistant for helping you to gain a deeper understanding

Enter keywords, phrases or any direct question...

Deeper Knowledge for Research Scientists and Public Authorities

Get a deeper insight in your knowledge

AILANI is a novel and unique semantic search enterprise solution for fast, easy and comprehensive knowledge discovery. It helps your scientists to get faster insight in existing public and proprietary knowledge and offers highly efficient possibilities to evaluate this knowledge in the short-term for better research decisions and results.

AILANI stands for Artificial Intelligence LANguage Interface. The platform combines semantic modeling, ontologies, linguistics and artificial intelligence (AI) algorithms in a self-refining system that delivers results based on interrelated meaning of facts.

AILANI delivers the most relevant results and puts them in a wider context for deeper analysis. Queries can be expressed in natural language and AILANI will provide you with relevant answers regardless of the quality of your search term.

AILANI as Scientific Assistant for COVID-19

Showing the most relevant keyword results first, the user has the possibility to drill down on visual summaries of the results and associated categories such as disease, source or biological process.

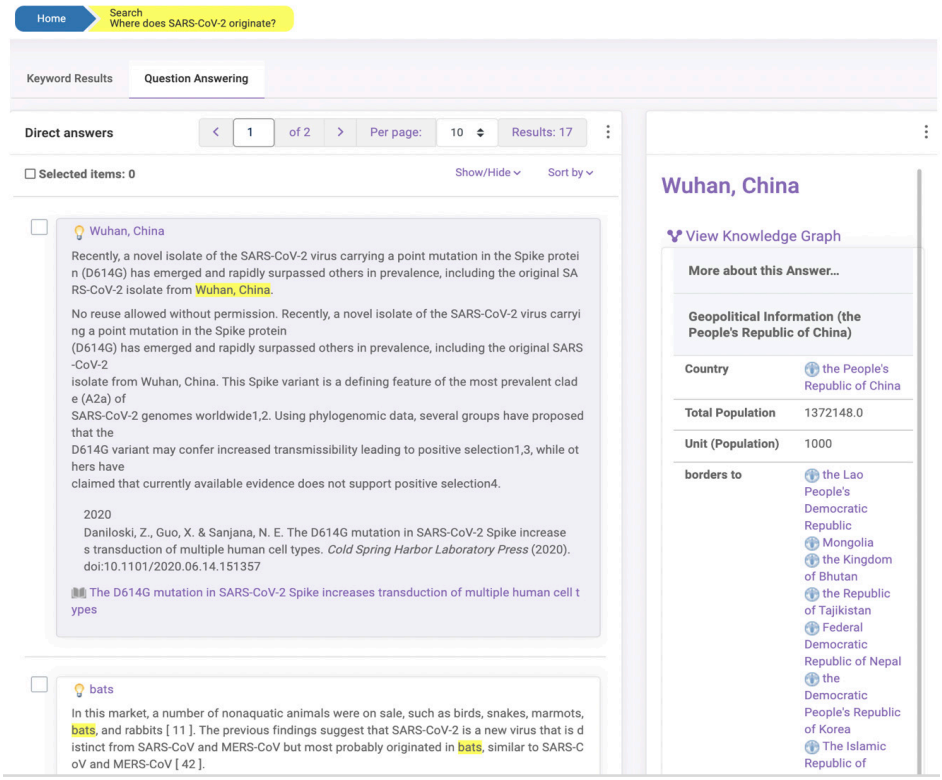
Suggestions based on Artificial Intelligence Algorithms complete the list of results and deliver concrete answers, even if the original search term is vague or not directly relevant.

Smart Breadcrumbs allow you follow your search journey. Search can be saved at any time and recalled later.

Users of AILANI can easily set favourites and alerts, thus adapting the system to their individual search behaviours.

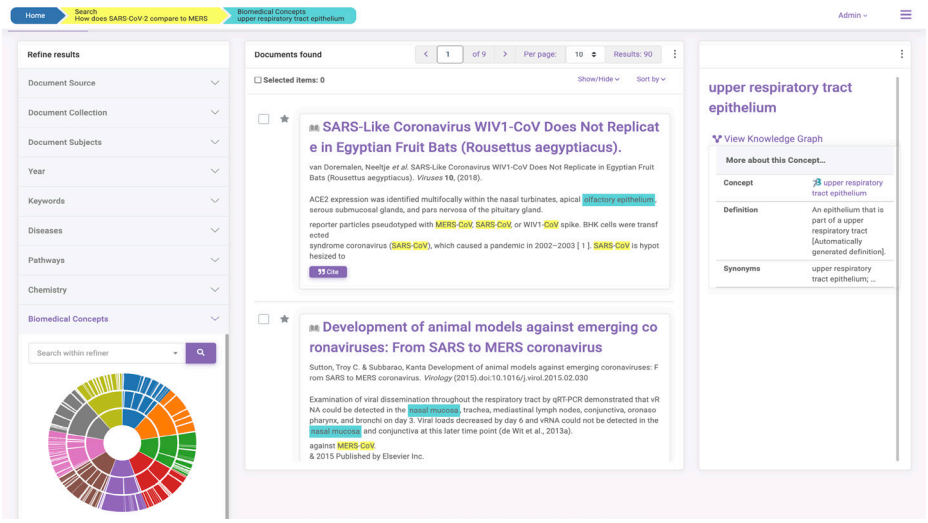
Examples for COVID-19 (SARS-CoV-2)

Where does SARS-CoV-2 originate?



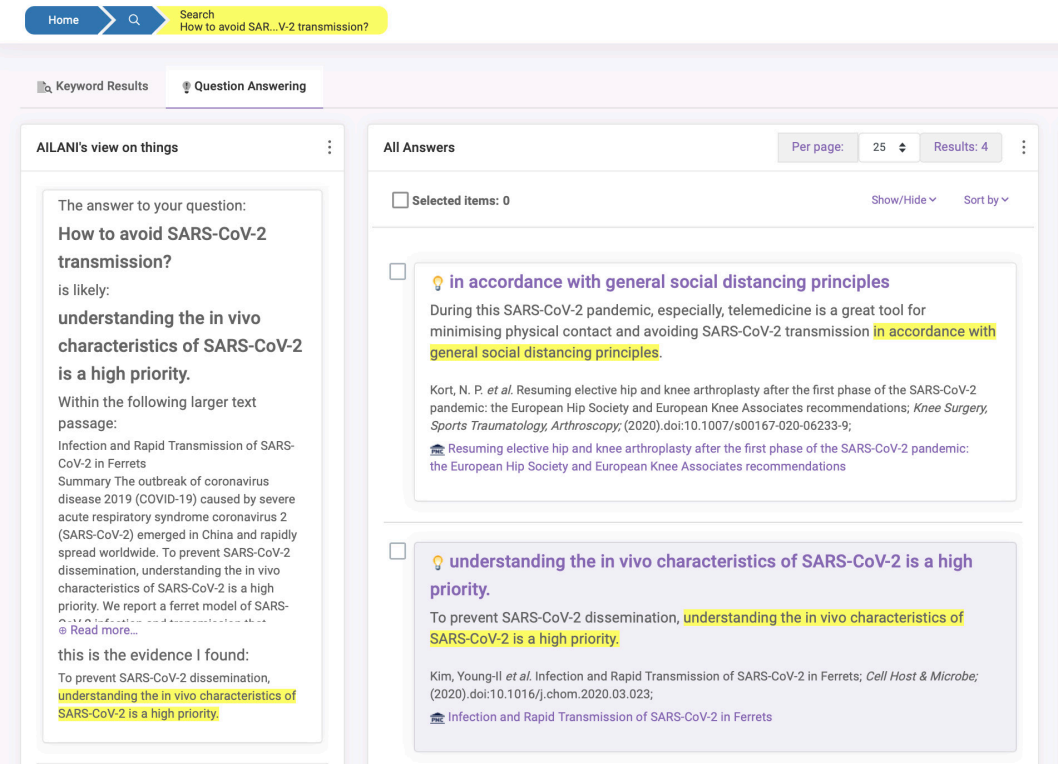
AILANI: The Artificial Intelligence Algorithm delivers Wuhan, China and bats as answers.

How does SARS-CoV-2 compare to MERS?



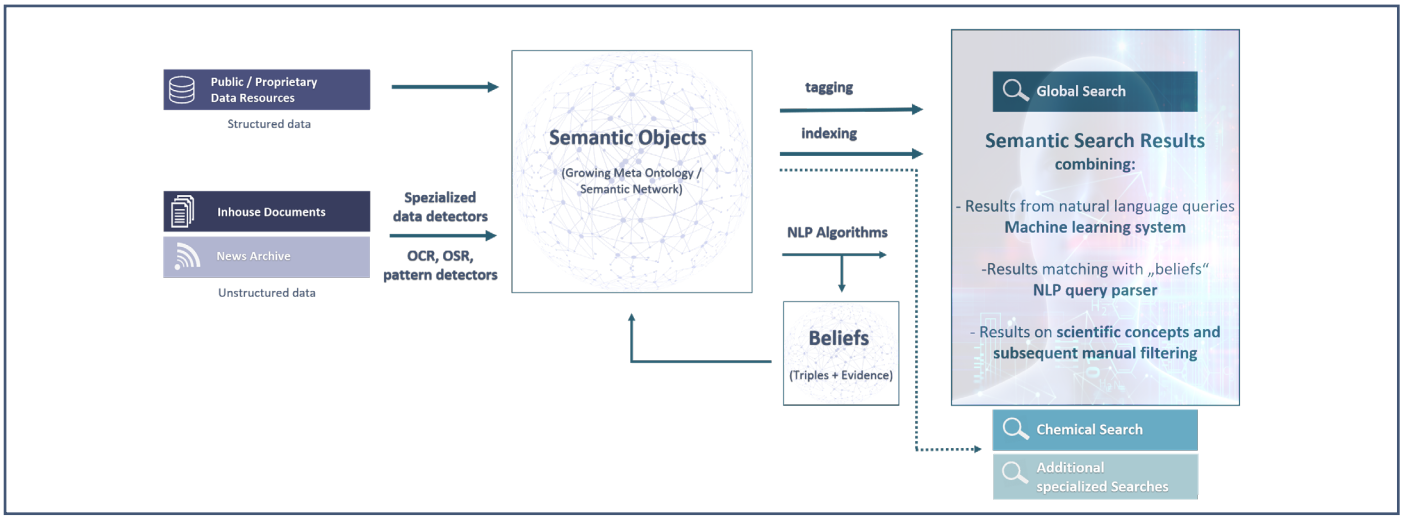
AILANI: The Keyword Search delivers a specific epithelial SARS-CoV receptor as major difference to MERS-CoV and HCoV-EMC. The drill-down on „upper respiratory tract epithelium“ as anatomic structure of interest reveals differences in affected anatomic region and cell types between MERS, WIV-CoV and SARS-CoV.

How to avoid SARS-CoV-2 transmission?



AILANI retrieves answers such as social distancing principles and understanding the in vivo characteristics of SARS CoV-2.

How does AILANI work?



Based on the semantic core technology of Biomax, AILANI provides an extensible search framework that automatically maintains a growing and evolving semantic network. This “meta-ontology” supplements and extends more than 60 life science ontologies that are automatically updated and can be extended with any additional public or proprietary ontology with just a few mouse clicks.

There are many different ways to connect structured and non-structured data resources to the system. The system can interface with existing document management systems. Relational databases can be connected directly. Web services can be accessed and crawlers can sift through shared data repositories. Repositories of scanned documents are analyzed using optical character recognition (OCR) and documents that were previously subjected to OCR can be re-analyzed using current advanced neural network-based algorithms to improve results.

Specialized “data detectors” detect and extract data types and patterns specific to any business area.
For example, in chemistry and pharmacology, two-dimensional chemical structures embedded in scanned reports are detected using optical structure recognition (OSR), extracted and translated into searchable chemical notations. Corporate identifiers can be detected with specialized pattern detectors and represented as “semantic objects”; in this way, any one of these objects can become a focal point related to all associated real-world data.

Concepts represented by ontologies and other “semantic objects” in the knowledge network are tagged and indexed for fast search access. Text analysis with natural language processing algorithms extract enriched triples, so-called “beliefs” of typed associations between the managed semantic objects.
The extracted beliefs describe the semantics of an association between “real-world” objects typically found in specific domains (like the life sciences, materials sciences or chemistry). These associations are enriched with sentences that support the assertion and additional meta-data, for example a ranking score. Beliefs augment the managed body of knowledge and over time build up to establish a priceless corporate-wide repository of knowledge.

Acknowledgement

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