

2021 |

Averbis GmbH Literature Classification for Life Sciences

powered by



Averbis in a nutshell

Averbis is a text analytics company specialized in Machine Learning and Natural Language Processing (NLP)

Our solution



AI assisted Machine Learning/Text Mining
Platform for Pharma

AVERBIS IS AWARDED AS AI CHAMPION



KI-Champions
Baden-Württemberg

FROM BADEN-WÜRTTEMBERG TO THE WORLD

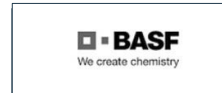
Hospitals



Healthcare Partners



Pharma



Awards



Literature Research in Life Sciences

Save up to 80% of your effort and get better results

Today

Using (complex) keyword queries on literature databases

- leads to many irrelevant results (~85%)
- is still not complete
- Stop wasting time on an endless amount of manual work!
- Improve accuracy!
- Make data-driven decisions!
- Focus on the interesting work only!

Tomorrow

Make your literature research more efficient with AI



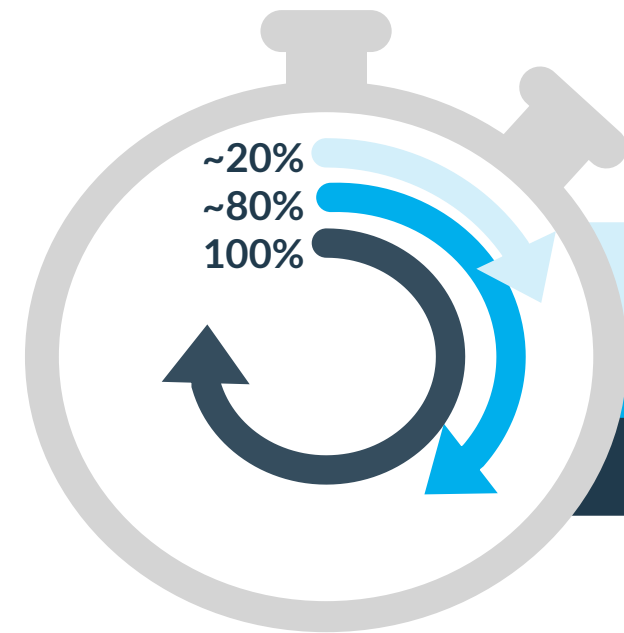
Challenges of todays Literature Research

Save up to 80% of your effort and get better results

Experience the benefits of
using AI/ML to improve
your literature research!

Challenges of modern literature research

- The amount of newly published literature is **increasing rapidly**
- The resources needed to analyze more literature are **costly** and **not efficient**
- Time spent on manual research could be used **more effectively** on other work



INFORMATION
discovery

Strategic Keyword Searches

Manual Literature Research

Let's talk about successful use cases

Already productive use cases:

- ✓ AI based literature research
- ✓ Scientific Literature Classification
- ✓ Pharmacovigilance / Adverse Event detection¹
- ✓ Systematic Literature Review²
- ✓ Technology, Patent and Competitor monitoring

Tomorrow:

Your specific literature research project

What our Customers say

Nicolas Lalyre

Syngenta
Head IP Operations

The automatic identification of patent specifications relevant to us has significantly increased productivity in our department. The cooperation with Averbis is extremely pleasant – this is really about solving my problems!

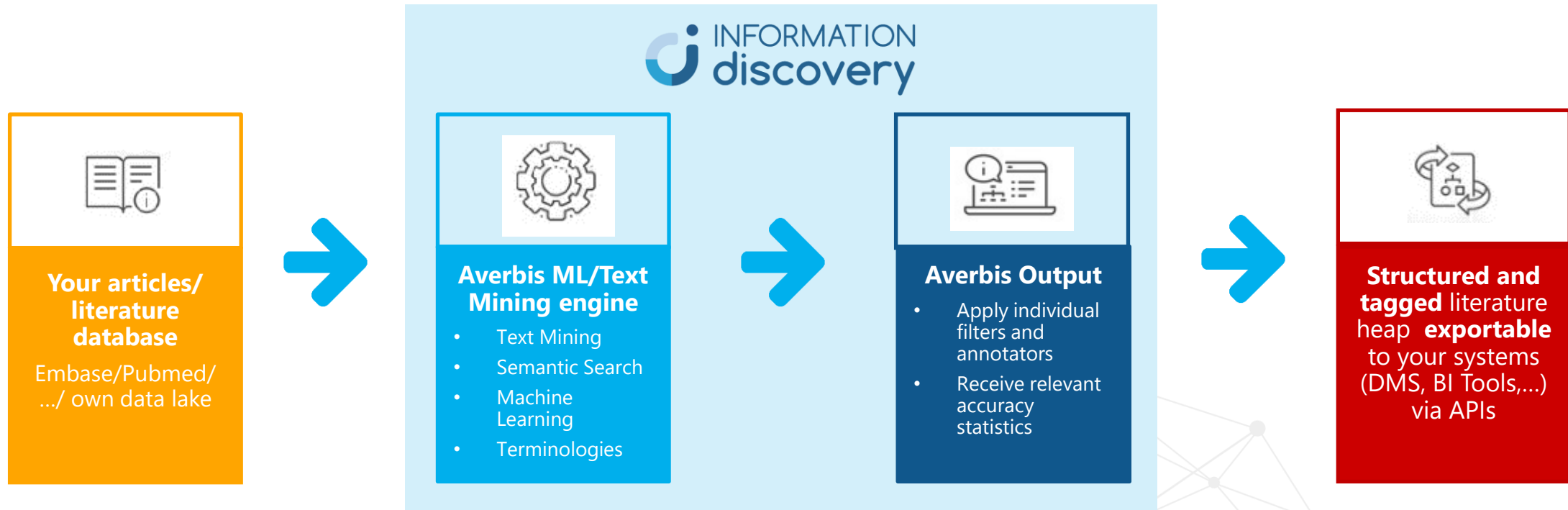


¹: presented at Pharmacovigilance Conference 2020 with Bayer

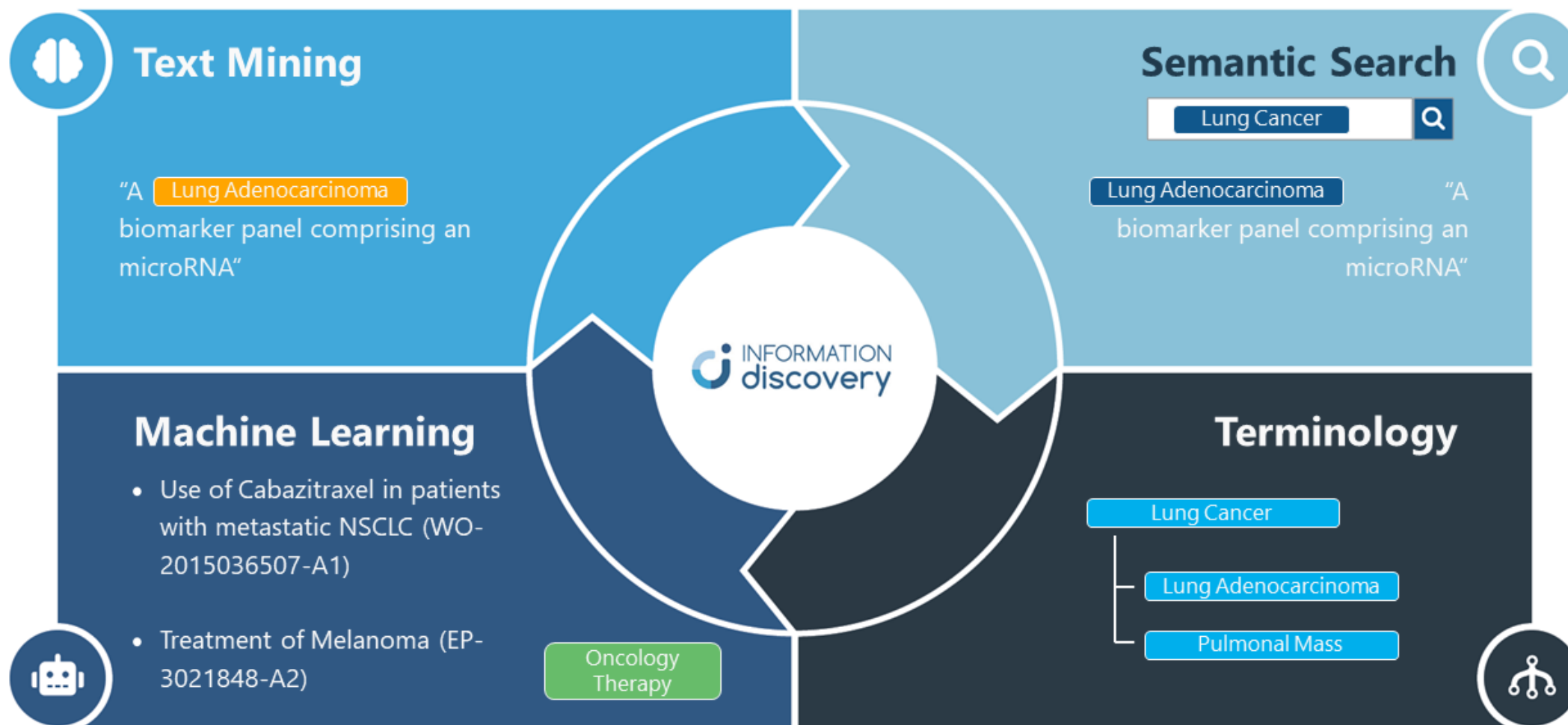
²: published at ISPOR 2020 with Roche

Literature Classification in Life Sciences

What does Averbis Information Discovery do?



Information Discovery features



Information Discovery features

The central graphic is a circular logo with the text 'INFORMATION discovery' in the center. Surrounding it are four screenshots of the software interface, each highlighting a different feature:

- Top Left:** A screenshot of the 'Text Analysis' interface. It shows a list of categories (Abbreviation, AdverseEvent, Chemicalsdrugs, ClinicalOutcome, Concept, Device, Disorder, Entity, Procedure, Sentence, Stem, Token) with checkboxes. Below, a text snippet is shown with various words highlighted in different colors corresponding to the categories.
- Top Right:** A screenshot of the 'Search' interface. It shows a search bar, filters (Anatomy, Disorder, Chemicals & Drugs), and a list of search results with titles and snippets.
- Bottom Left:** A screenshot of the 'Classification' interface. It shows a list of labels (Breathing Apparatus, Dialysis Device, Insulin Pump) with checkboxes. Below, a text snippet is shown with various words highlighted in different colors corresponding to the labels.
- Bottom Right:** A screenshot of the 'Concept Mapping' interface. It shows a list of concepts (NCIT C143862: 'Stroke, CTCAE', NCIT C156206: 'Family History of Stroke', NCIT C3390: 'Cerebrovascular Accident', etc.) with checkboxes. Below, a table shows the mapping of concepts to terms.

Classification Results

Home / My Projects / Information Discovery for Life Sciences / Classification

101 Information Discovery for Life Sciences

Classification Information Discovery for Life Sciences

4 Status: Autoclassified

1

State: IDLE Model: READY

Sort by Confidence (descending) Page size 10 42 results found

Label

Confidence

Status

Anatomy

Disorder

Cardiovascular disorder 42

Atherosclerosis 6

Hypertension 5

Cerebral Stroke 4

Inflammation 4

Coronary disease 3

Diabetes mellitus 3

Chemicals & Drugs

Device

Procedures

Drug Safety: Substance

Label document(s) Classify document(s) Export search results

BMI, waist circumference, and selected cardiovascular disease risk factors among preschool-age children. 22158004

Relevant 99%

2

Obesity (Silver Spring) 20(9), 2012 (S)

Messiah SE, Arheart KL, Natale RA, Hlaing WM, Lipshultz SE, Miller TL

... and non-HDL cholesterol and low HDL cholesterol were generally associated with elevated BMI and WC in Hispanic children. TC and LDL cholesterol were not significantly ...

... circumference (WC) with CVD risk factors, including fasting triglyceride (TGL), high- and low-density lipoprotein (HDL and LDL), total cholesterol (TC), non-HDL ...

... In adults, overweight is often associated with other cardiovascular disease (CVD) risk factors. We determined whether these associations were also present ...

... non-HDL cholesterol, and C-reactive protein (CRP) in 3,644 3- to 6-year-old children included in the 1999-2008 National Health and Nutrition Examination Surveys ...

Anatomy: Cardiovascular System 2

Chemicals & Drugs: Cholesterol 5

Disorder: Body mass index increased 5

Publication Type: Journal Article

Nutritional Supplementation with Essential Amino Acids and Phytosterols May Reduce Risk for Metabolic Syndrome and Cardiovascular Disease in Overweight Adults with Mild Hyperlipidemia.

Relevant 99%

4

J Endocrinol Diabetes Obes 3(2), ()

Coker RH, Deutz NE, Schutzler S, Beggs M, Miller S, Wolfe RR, Wei J

... for physical activity. Plasma total cholesterol and LDL levels decreased in all nine volunteers (P<0.005 for cholesterol and P<0.02 for LDL). In six of these ...

... Hyperlipidemia and insulin resistance are risk factors for the development of metabolic syndrome and cardiovascular disease. We have previously observed ...

Anatomy: Blood 4

Chemicals & Drugs: Cholesterol 6

Disorder: Cardiovascular disorder 6

Publication Type: Journal Article

1. Auto-classification
2. Confidence values
3. Filters ready to use
4. Safety highlights

Filtering and indexing: Publications and articles get sorted into topics and relevant text is highlighted automatically (Screenshot taken from the Information Discovery dashboard)

Use of Classification and Extraction Results

Custom visualizations (e.g. PowerBI, Tableau)

Post-processing, further analysis and transfer results to other applications

Integration in your processes and infrastructure via API

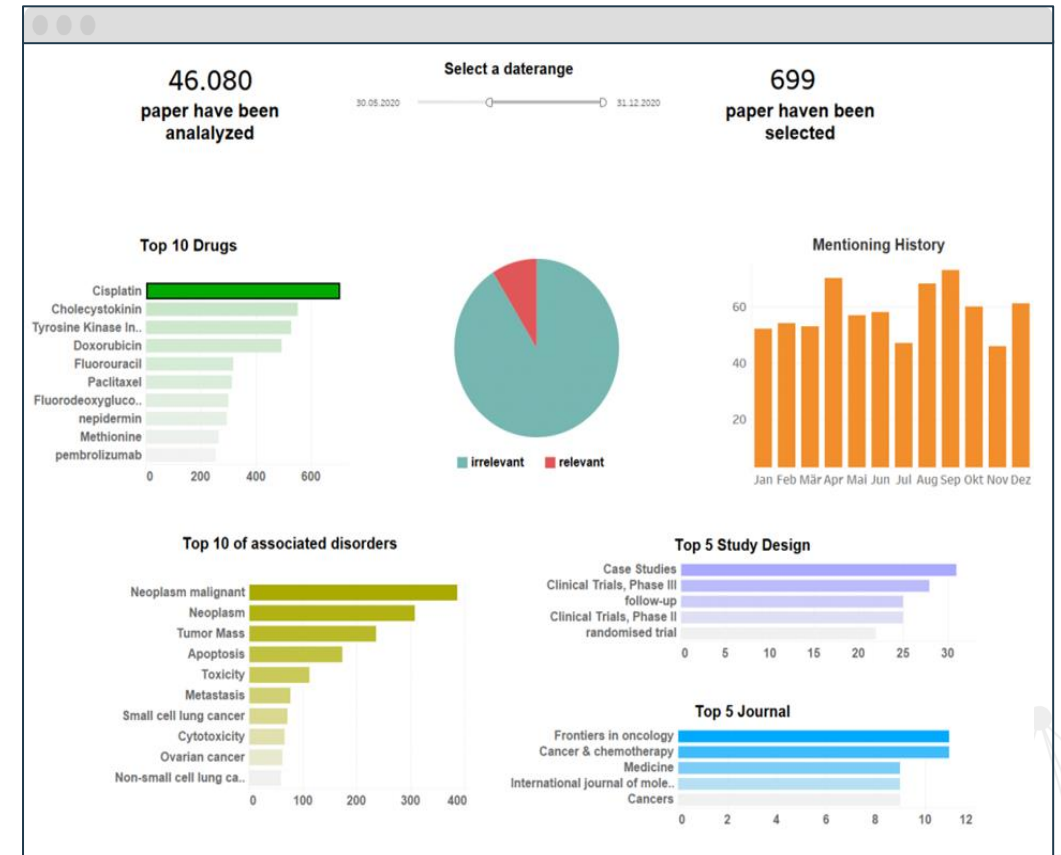


Tableau output: Export your data directly from Information Discovery into Tableau or Power BI for custom views of your results.

Use Case: Systematic Literature Review with AI

Reduce your workload and shrink the approval timeline

Save up to 75% of time and costs!

In an industry where time to market is crucial and quality is key you want a solution that offers both. Currently SLRs are performed manually in a time and resource consuming process.

With our text mining and machine learning approach you can save time and effort with transparent and reproducible results.

An example of this can be seen in the shown results of our SLR project.



Results of the SLR project: ISPOR 2020

"A Systematic Review of Non-Small Cell Lung Cancer Clinical Trial Literature" – Luisa Queiros, Andreas Witzmann, Mateusz Bednarski, Marc Sumner, David Baehrens, Seye Abogunrin -

<https://europe2020-ispор.ipostersessions.com/Default.aspx?s=DC-D6-E5-F5-DA-F2-D0-1C-56-42-62-C6-63-9D-48-3B>

Use Case: Adverse Events Detection

Biomedical Literature

~2 million articles/year

embase
BIOMEDICAL ANSWERS

PubMed

Your Data Lake



Text Mining/ML



Automatically extract signals

Adverse Events
Company drugs
Competitor drugs

+

Analyze historical
decisions



Output

Safety information needed for
compliance



Automatically sort the most
relevant results on top

Minimize risk of missing AE's

Comply with regulations

e.g. find 30,000 relevant
articles/year

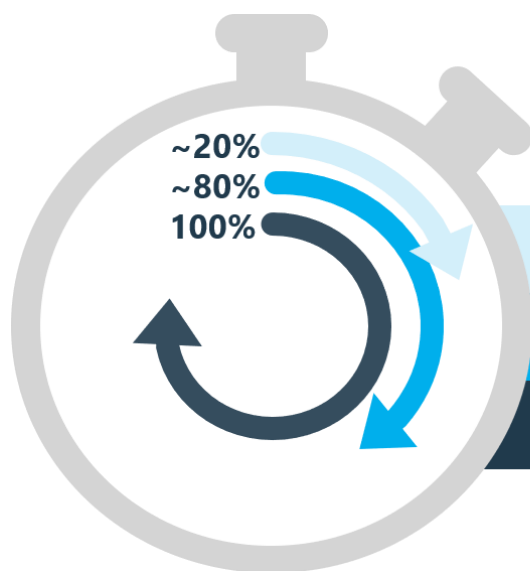
The future of literature research



Text Mining / Machine Learning
Platform

helps you to

- Improve Quality and Compliance
- Monitor Technologies and Markets
- Discover New Drugs
- Reduce time to market



Save up to 80% of your time and
get better results!

Strategic Keyword Searches

Manual Literature Research

averbis
text analytics

Let's talk about your needs!



**Interested?
Get in Touch**

Hanno Ebsen
Hanno.Ebsen@averbis.com
+49 179 2414585