Food and Agriculture Organization of the United Nations

Lessons learned on data discovery, integration and ingestion in AGRIS

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DCMI Virtual 2020

22 September 2020

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FAO

The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations that leads international efforts to **defeat hunger** and **improve nutrition and food security**

It was founded in October 1945

The FAO is headquartered in Rome, Italy and maintains regional and field offices around the world, operating in over 130 countries

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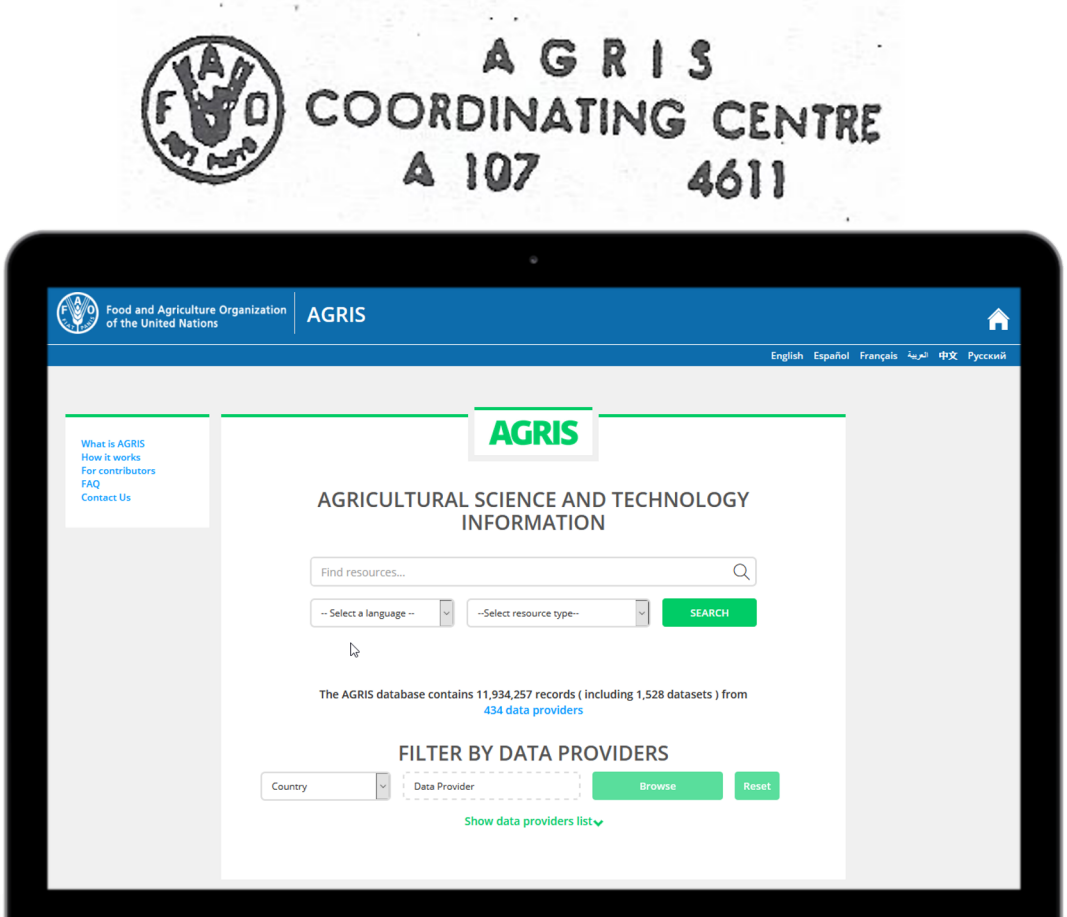
AGRIS

Initiative set up by FAO in 1974 to **make information on agriculture research globally available**.

A collection of **multilingual bibliographic metadata on agricultural research**

A network of nearly 450 data providers from 150 countries

https://agris.fao.org



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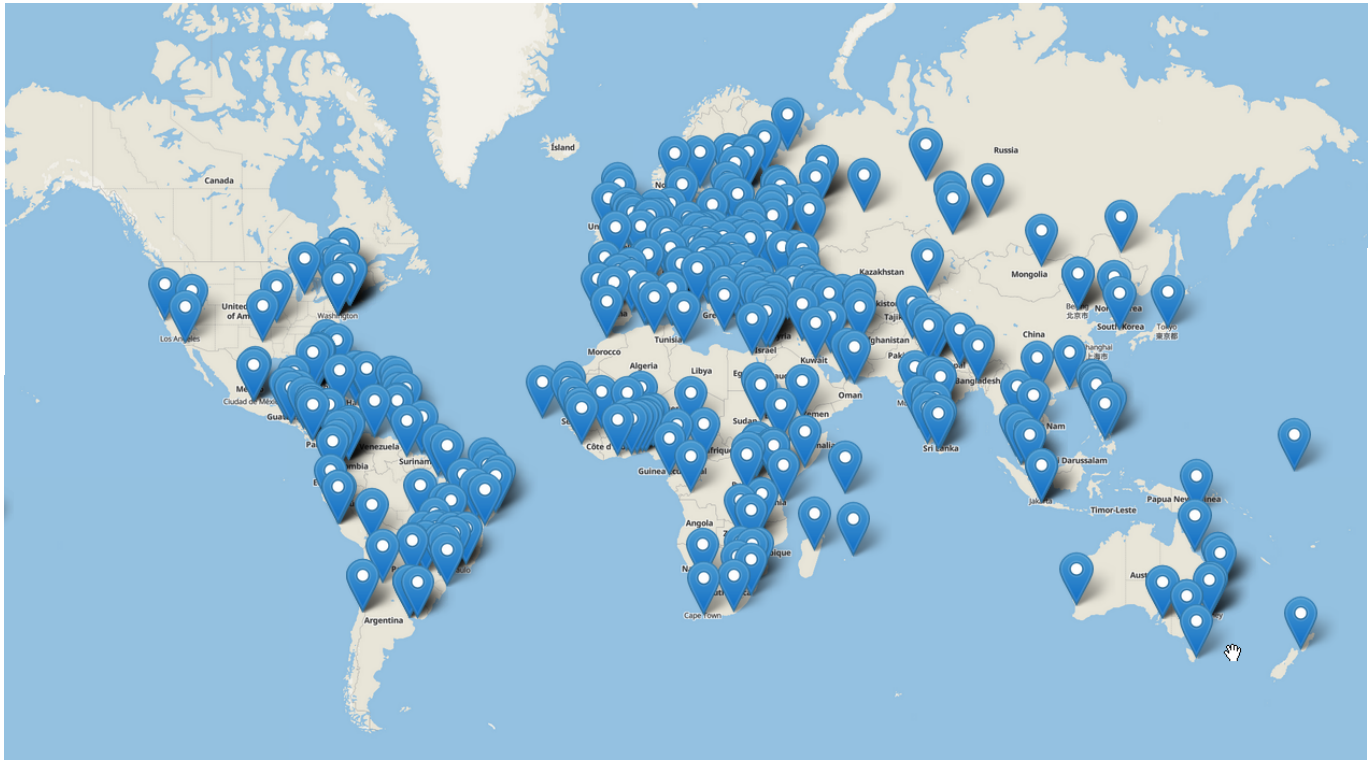
The AGRIS Network

12 million
bibliographic records

3.4 million
full-text links

Accessed from
200
Countries and Territories



Records by
434
Data providers

From about
150
Countries

Available in up to
90
Languages

AGRIS Data Providers

Originally, AGRIS centers were assigned by governments to collect all the scientific production in the country and to send it to AGRIS

From 2005, AGRIS accepts data also from institutional repositories, journal publishers and aggregators

With the evolution of technology and the growth of **open access institutional repositories**, AGRIS has improved its methods for harvesting, processing and indexing metadata

Challenges

Integration of new data in AGRIS

- Variety of metadata formats
- Variety of standards
- Different levels of metadata quality

Automatic ingestion from web APIs

- Understand the relevance of high-volume data (data discovery)
- Content classification and data integration

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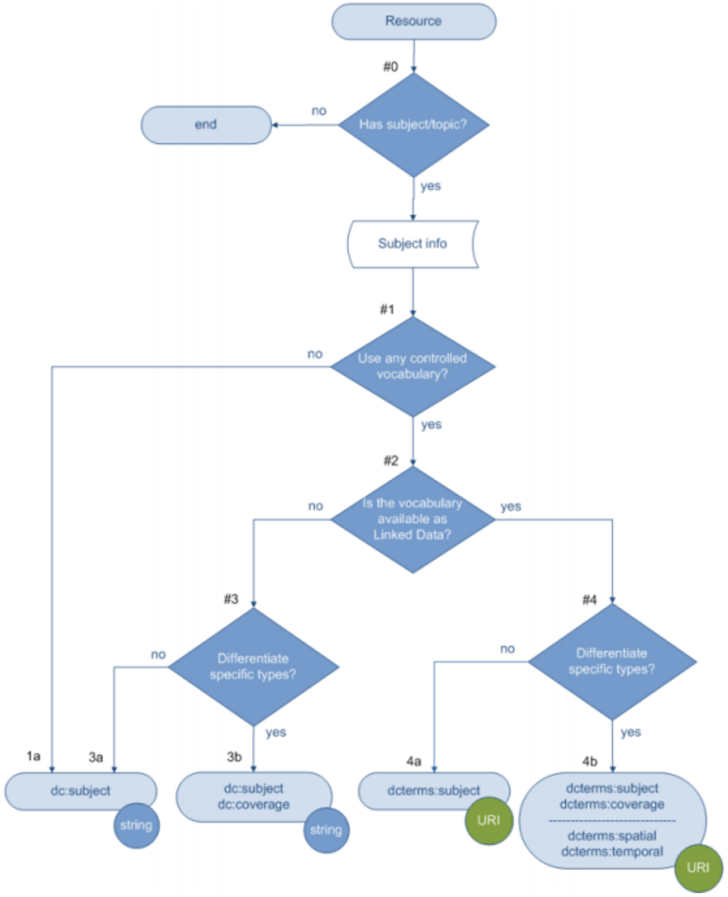
AGRIS Metadata Formats

AGRIS accepts the most common XML metadata formats such as MODS, Crossref, DOAJ, EndNote, MARC21, METS, Simple DC, PubMed and AGRIS AP

The data is curated and converted prior to the AGRIS indexing

The AGRIS team highly recommends to consider **LODE-BD Recommendations 2.0** in order to learn about different metadata terms that can be used to describe properties included in the record



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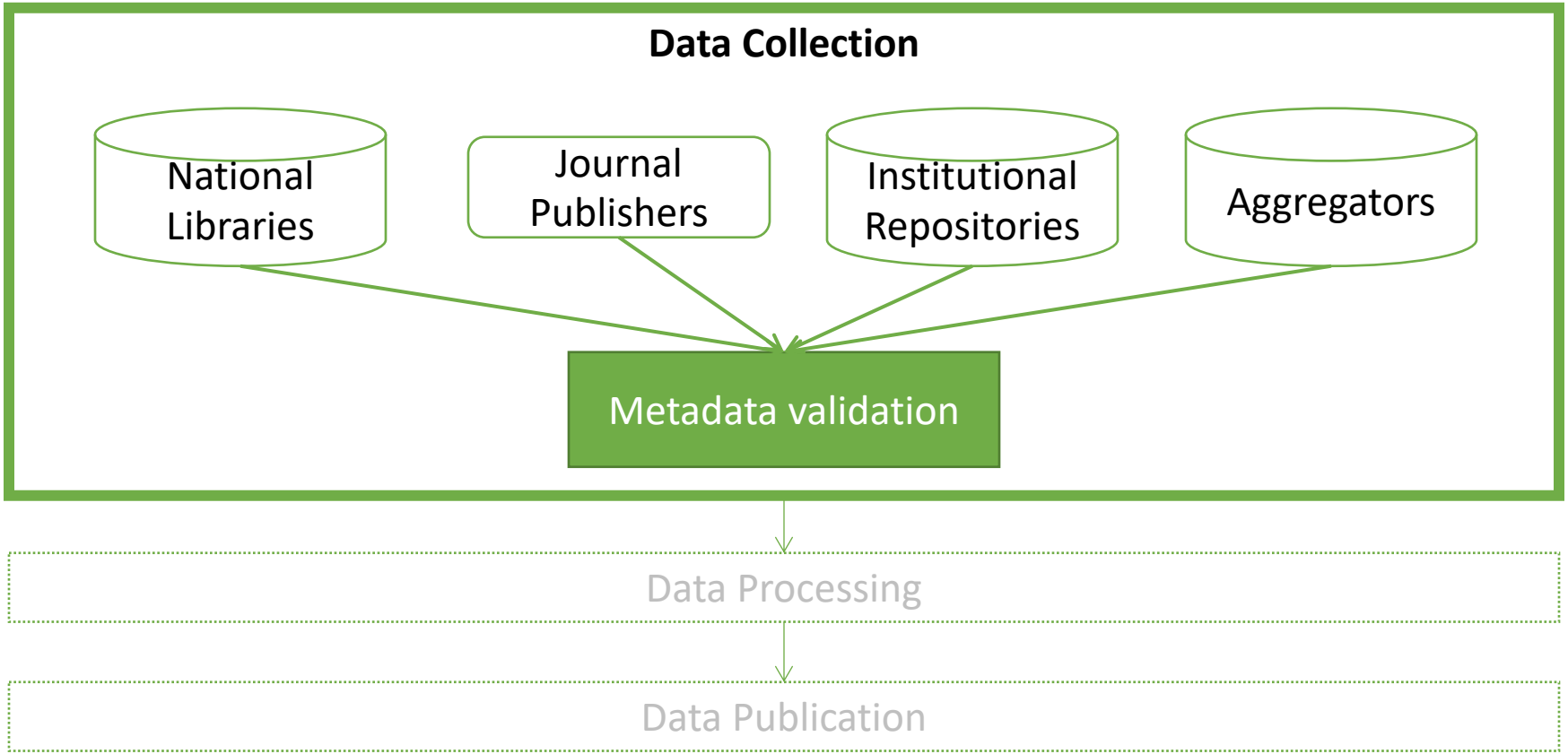
Initial phase: manual validation



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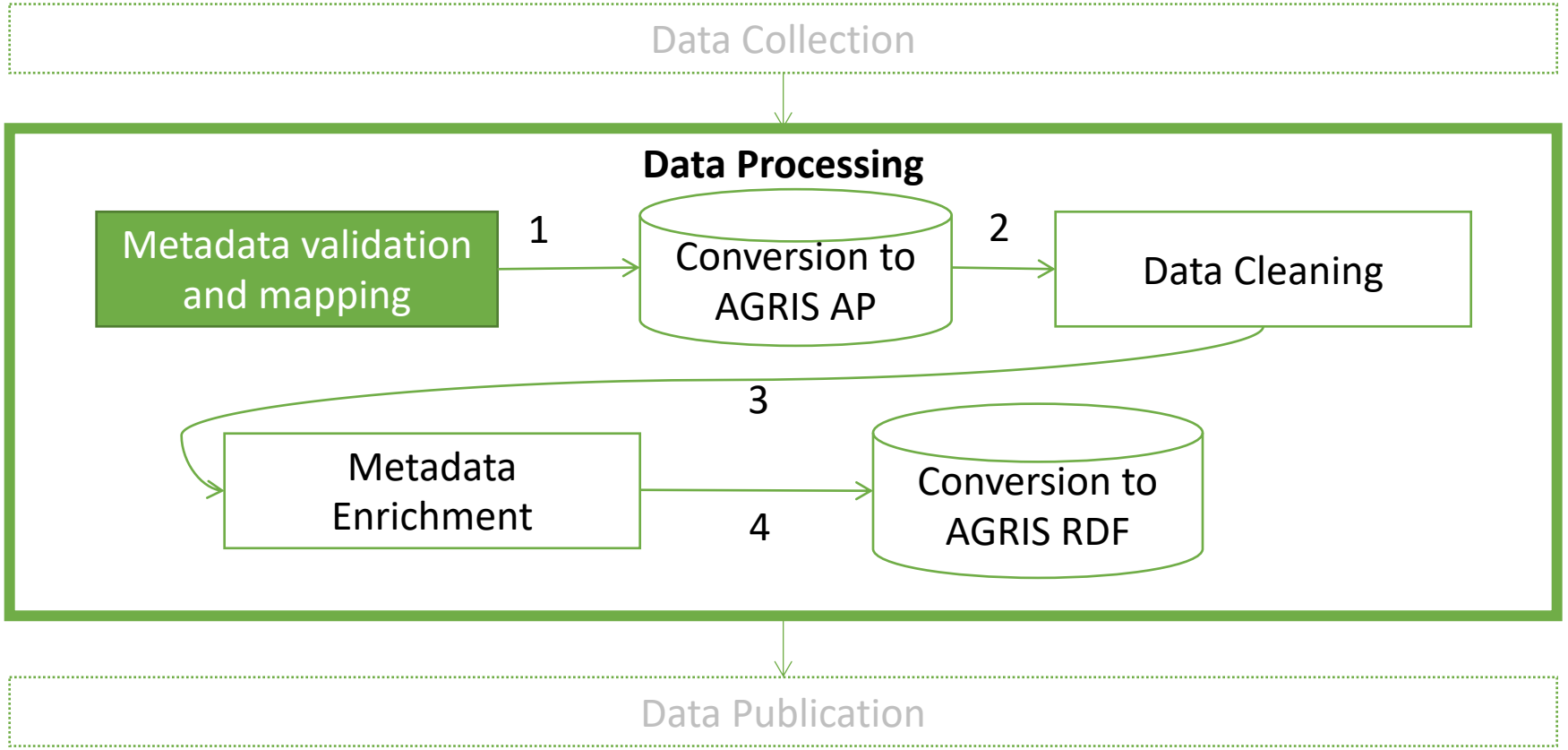
Data Processing



Automatic harvesting and integration

In the digital era, many institutions and organizations expose the data on the web

Big volumes of data from heterogenous sources raise problems of **relevance, data classification, data standardization, data validation, and data provenance**

Data relevance and data classification require new solutions

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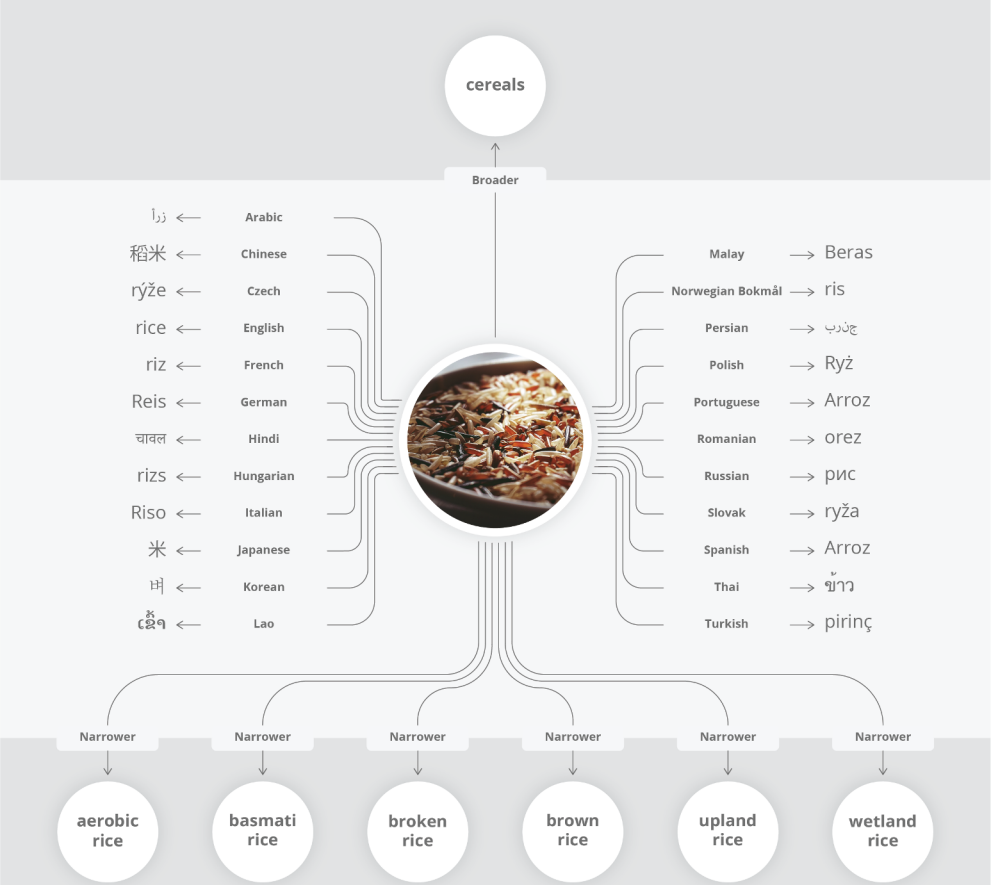
AGROVOC



Controlled vocabulary **covering all areas of interest** of FAO, translated into 39 languages

Curated and multilingual list of related contents

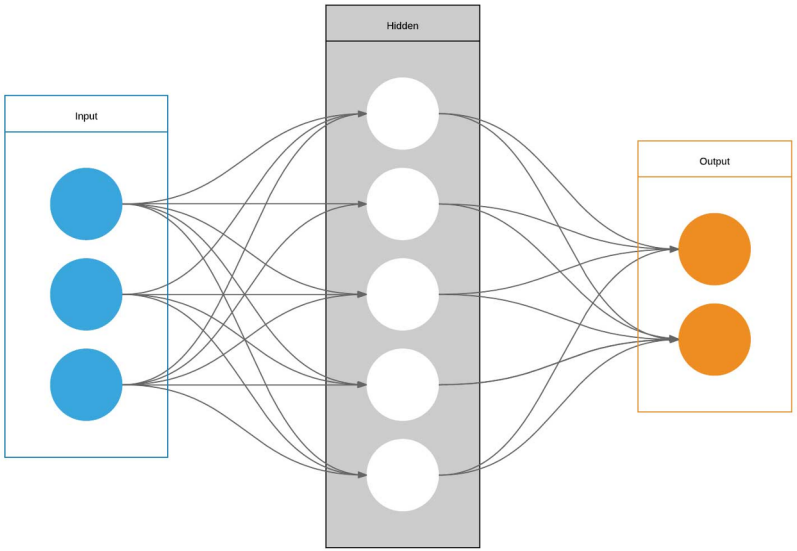
It can help with data discovery and classification

Facing with data relevance

The problem of data relevance refers to the ability of harvesting only data that belong to the AGRIS domain

Data is not always classified, or the classification is very often poor

The AGRIS solution: machine learning using data already available in AGRIS and the richness of AGROVOC

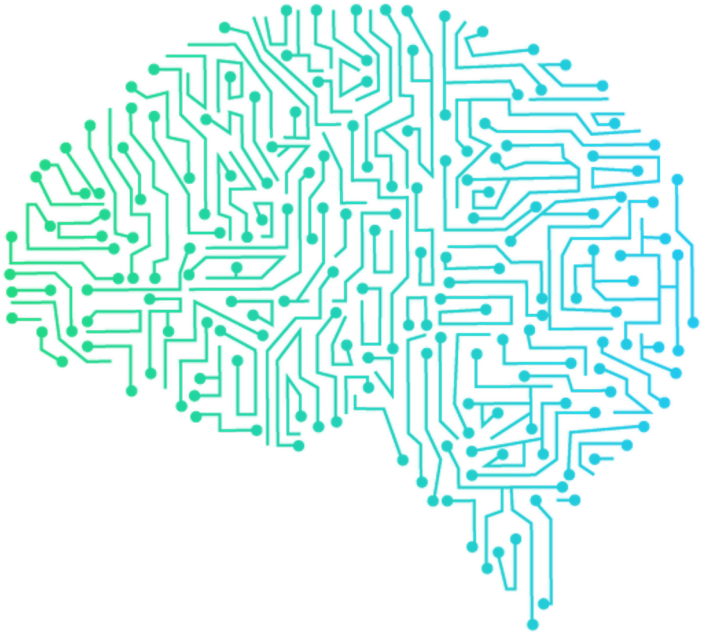


Facing with data classification

AGRIS relies on AGROVOC to enable multilingual search and to connect the data (internally and to external data)

Being able to classify and tag metadata with AGROVOC is important to enrich the semantics of AGRIS content

The AGRIS solution: machine learning using AGROVOC and natural language processing techniques



Thank you!

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