Analytical features of FoodChain-Lab and successful applications in outbreak analyses (live demo)

11.02.2025

Alexander Falenski

EHEC O104:H4 outbreak in sprouts 2011

EHEC 2011 - which is the contaminated ingredient?

Products in focus

- Cucumbers

- Tomatoes

- Sprouts

Hepatitis A outbreak in berries 2013/14

Geocoding Services

Service	Data request	Server is located in	Addresses from	Map basis	Precision	Costs
Photon	Online	DE	World	OSM	House number	Free
MapQuest	Online	USA	World	HERE, OSM	House number	Free
Bing Maps	Online	USA	World	Bing Maps	House number	Free
BKG	Online	DE	World	BKG	House number	€

BKG – Bundesamt für Kartographie und Geodäsie (official maps of Germany); OSM – Open Street Maps

- Geocoding services often do not find all addresses. Then you can use a cascade of several geocoding services
- If you do not want to search for addresses online (due to GDPR reasons) it is possible to search for streets without house numbers. Or you search only for ZIP codes.
- If the whole geocoding service is downloadable you could also set up a server in your own institution so that your searches stay completely offline.
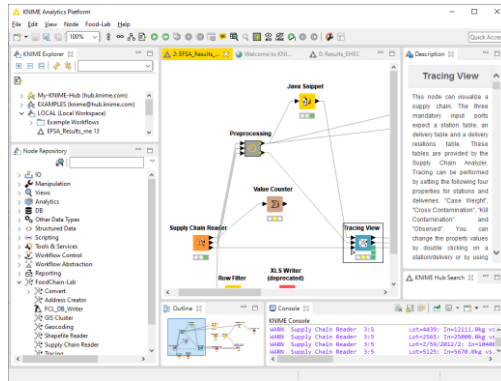
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BKG	Online	DE	World	BKG	House number	€
Photon	Offline	In your institute	World	OSM	House number	Free
List of ZIPs	Offline	-	Depends on list	Shapefiles	ZIP region	Free

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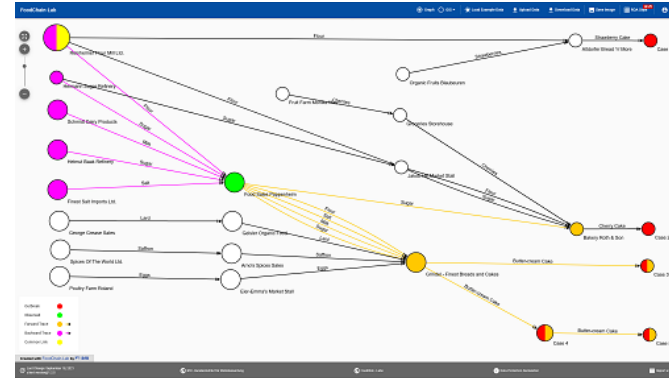
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Histamine in tuna outbreak 2017

Overview: FoodChain-Lab Desktop and Web App

FCL-Desktop

FCL-Web App

- In KNIME (~ 1 GB installation)
- Data is stored locally
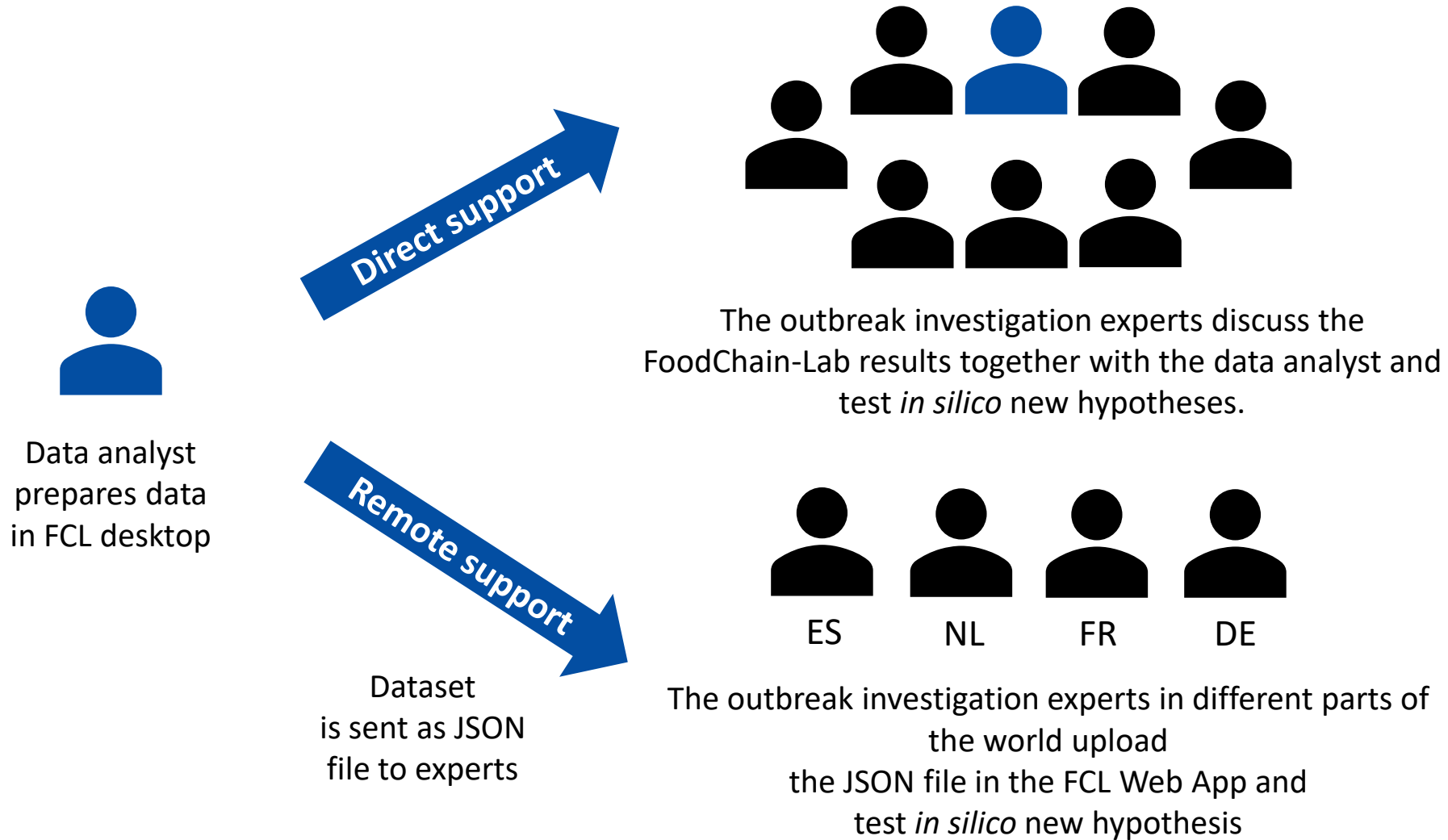- Using KNIME needs to be learned

Features
- Template import (Forward, backward, All-in-One)
- Tracing template generation
- Database with plausibility checks
- Geocoding
- Clustering
- KNIME Data analytics functionalities
- Graph view and GIS view
- Tracing
- Hypothesis generation
- -

- In a web browser (no installation)
- Data stays local, browser is only for visualisation
- Intuitive handling

Features
- - Import of the All-in-One Template
- -
- -
- -
- -
- -
- Graph view and GIS view
- Tracing
- Hypothesis generation
- ROA style for reports

Overview: FoodChain-Lab Desktop and Web App

Direct support

The outbreak investigation experts discuss the FoodChain-Lab results together with the data analyst and test *in silico* new hypotheses.

Data analyst prepares data in FCL desktop

Remote support

Dataset is sent as JSON file to experts

ES   NL   FR   DE

The outbreak investigation experts in different parts of the world upload the JSON file in the FCL Web App and test *in silico* new hypothesis

Alexander Falenski | FoodChain-Lab Training | 11.02.2025 | Paris

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