



**Minute Madness**  
**Poster & Demo Session**

**SEMANTICS 20**

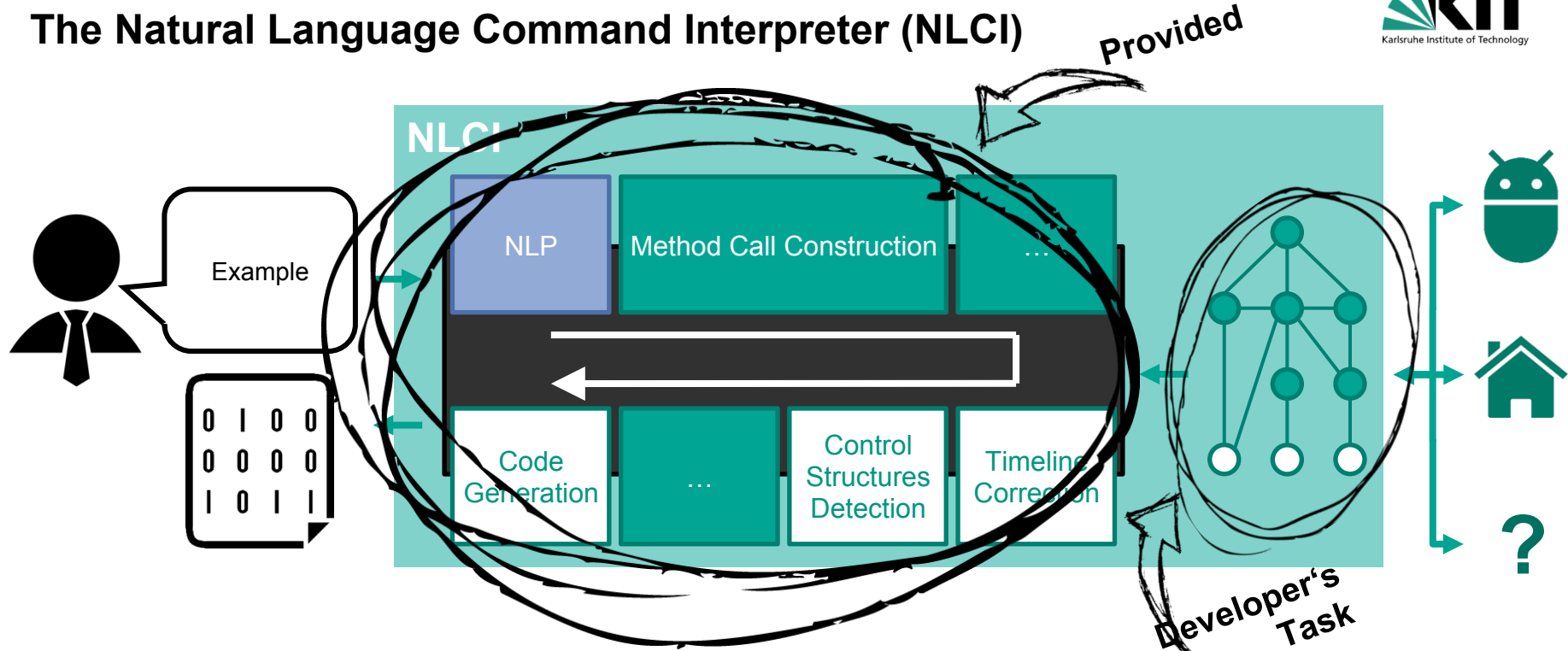
# How to Prepare an API for Programming in Natural Language

Sebastian Weigelt, Mathias Landhäußer, Martin Blersch

KIT – Department of Informatics – Institute for Program Structures and Data Organization (IPD).



# The Natural Language Command Interpreter (NLCI)



- Modular architecture to generate source code from written English prose
- Separates language analyses from domain knowledge (API)

**DALICC** is a **software framework** that supports **legal experts, innovation managers and application developers** in the **legally secure** reutilization of **third party data sources**.

**DALLICC** reduces the **costs of license clearance** and **helps to turn your digital assets into profit**.

Find out more @  
[www.dalicc.net](http://www.dalicc.net)



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# Semantic Knowledge Graph Embeddings for biomedical Research: Data Integration using Linked Open Data

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**Jens Dörpinghaus, Marc Jacobs**

Department of Bioinformatics

Fraunhofer Institute for Algorithms and Scientific Computing (SCAI)

---

# What is the correct embedding of triple?



?



# Generating “Who Wants to Be a Millionaire?” Question Sets Automatically from Wikidata

Markus Wohlan, Yannik Schröder and Frank Höppner

10th September 2019

**Ostfalia**  
University of  
Applied Sciences



**SEMANTiCS**  
**Karlsruhe 2019**

## Features

- ❖ **Filtering** for suitable Wikidata Content
- ❖ Appropriate **Wrong Answers**
- ❖ **Difficulty** Ranking

## Questions

Who published the special theory of relativity?

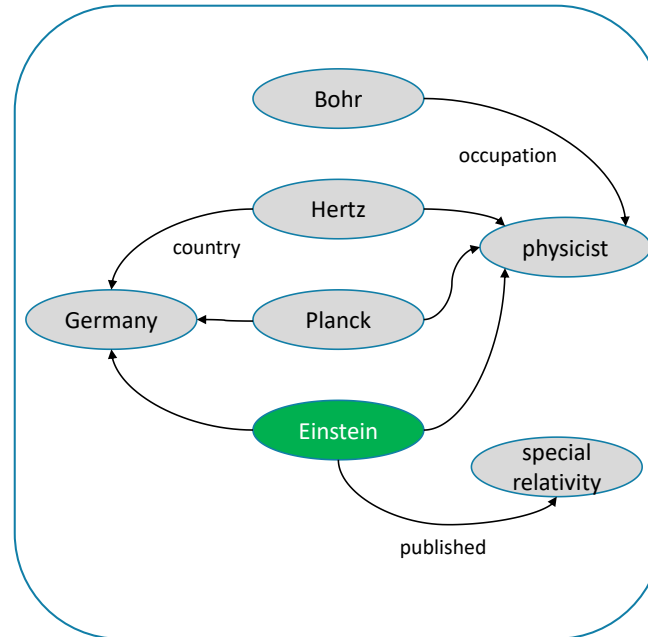
A Niels Bohr

B Albert Einstein

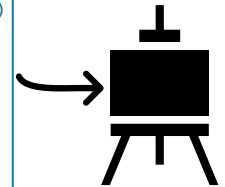
C Max Planck

D Heinrich Hertz

## Utilizing the Graph



Poster 14





# Employing Geospatial Semantics and Semantic Web Technologies in Natural Disaster Management

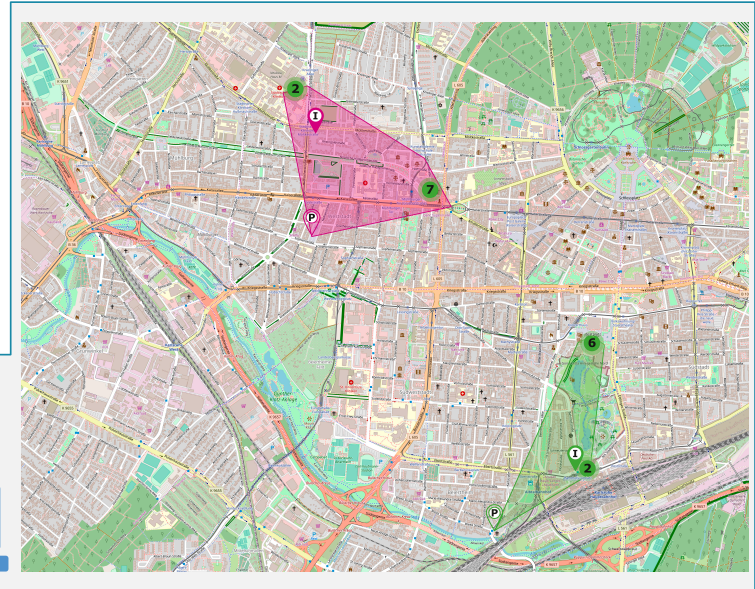
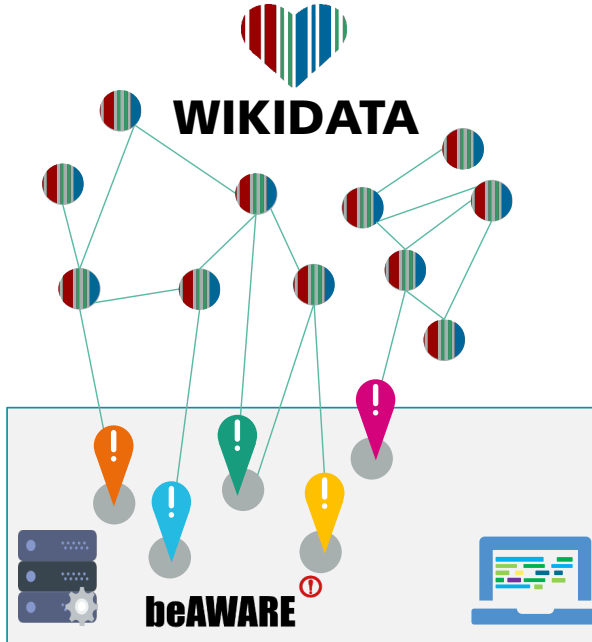
---

Tobias Hellmund, Manfred Schenk, Philipp Hertweck, Jürgen Moßgraber

**SEMANTiCS**  
Karlsruhe 2019



# Employing Geospatial Semantics and Semantic Web Technologies in Natural Disaster Management

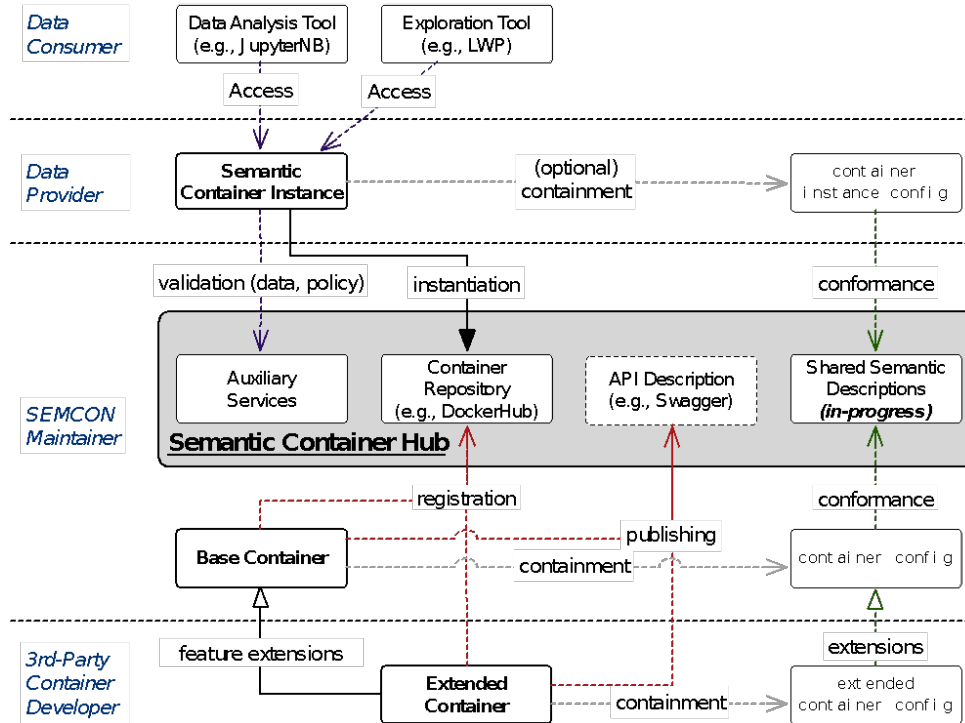


# Semantic Containers for Data Mobility: A Seismic Activity Use Case

**Fajar J. Ekaputra<sup>1</sup>, Peb R. Aryan<sup>1</sup>, Elmar Kiesling<sup>1</sup>,  
Christoph Fabianek<sup>2</sup>, and Eduard Gringinger<sup>2</sup>**

<sup>1</sup>) Faculty of Informatics - TU Wien, Vienna, Austria  
{fajar.ekaputra, peb.aryan, elmar.kiesling}@tuwien.ac.at

<sup>2</sup>) OwnYourData, Bad Vöslau, Austria  
{christoph.fabianek, eduard.gringinger}@ownyourdata.eu



- API-based access
- GDPR-compliance check

- deployed anywhere
- provenance trails
- billing support

- open source
- RDF-based metadata
- docker-based

- extensible container
- online documentation
- examples & demo available



P18

ERROR: POSTER NOT FOUND

P18



**KEEP  
CALM  
POSTER  
NOT  
FOUND**

# *Offline Question Answering over Linked Data using Limited Resources*

Paramjot Kaur, Vincent Blücher, Richa Jalota, Diego Moussallem, Axel-Cyrille Ngonga Ngomo, Ricardo Usbeck



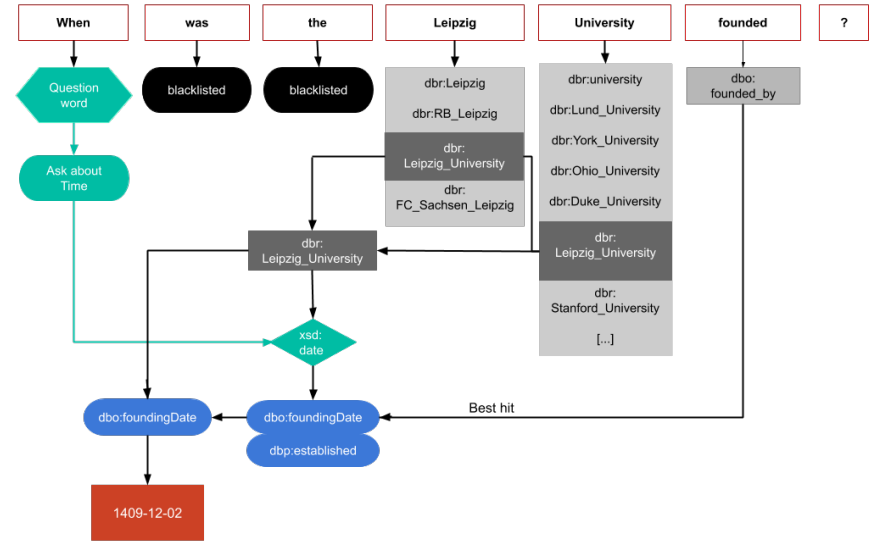
September 10, 2019



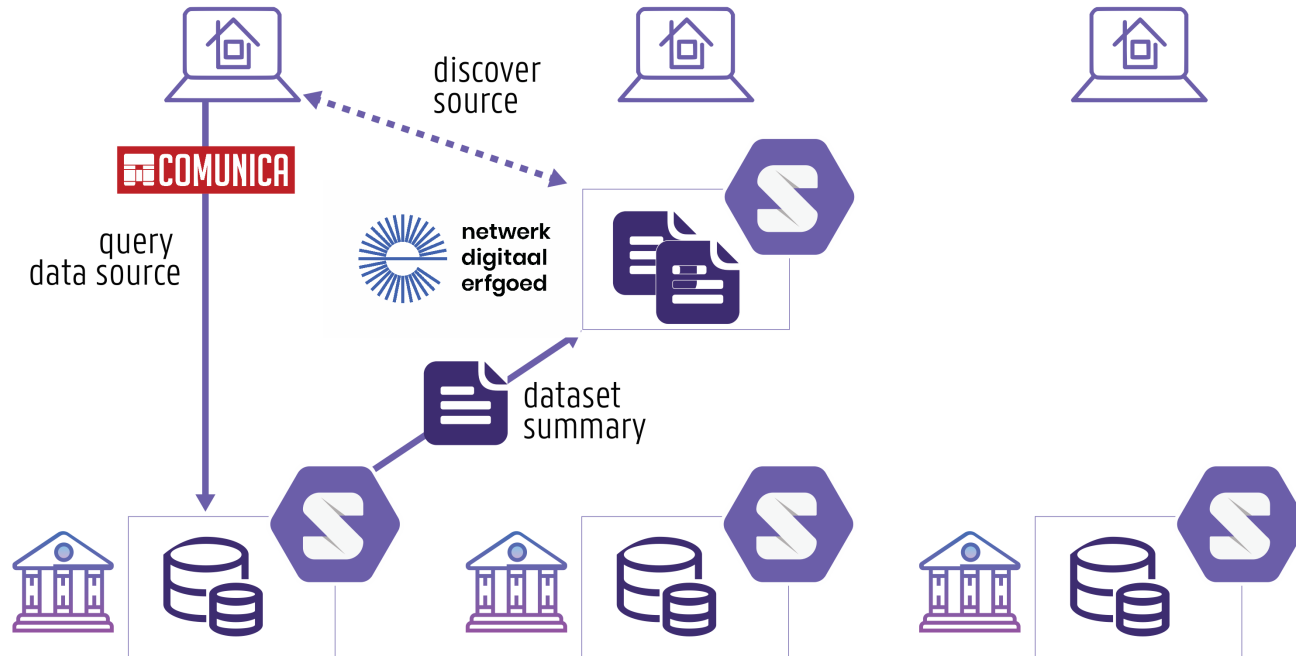
An **offline, mobile Question Answering (QA)** system which is able to answer a **spoken** or a **typed** user question only by using the **limited resources** of a mobile device such as a smartphone and **without an internet connection**

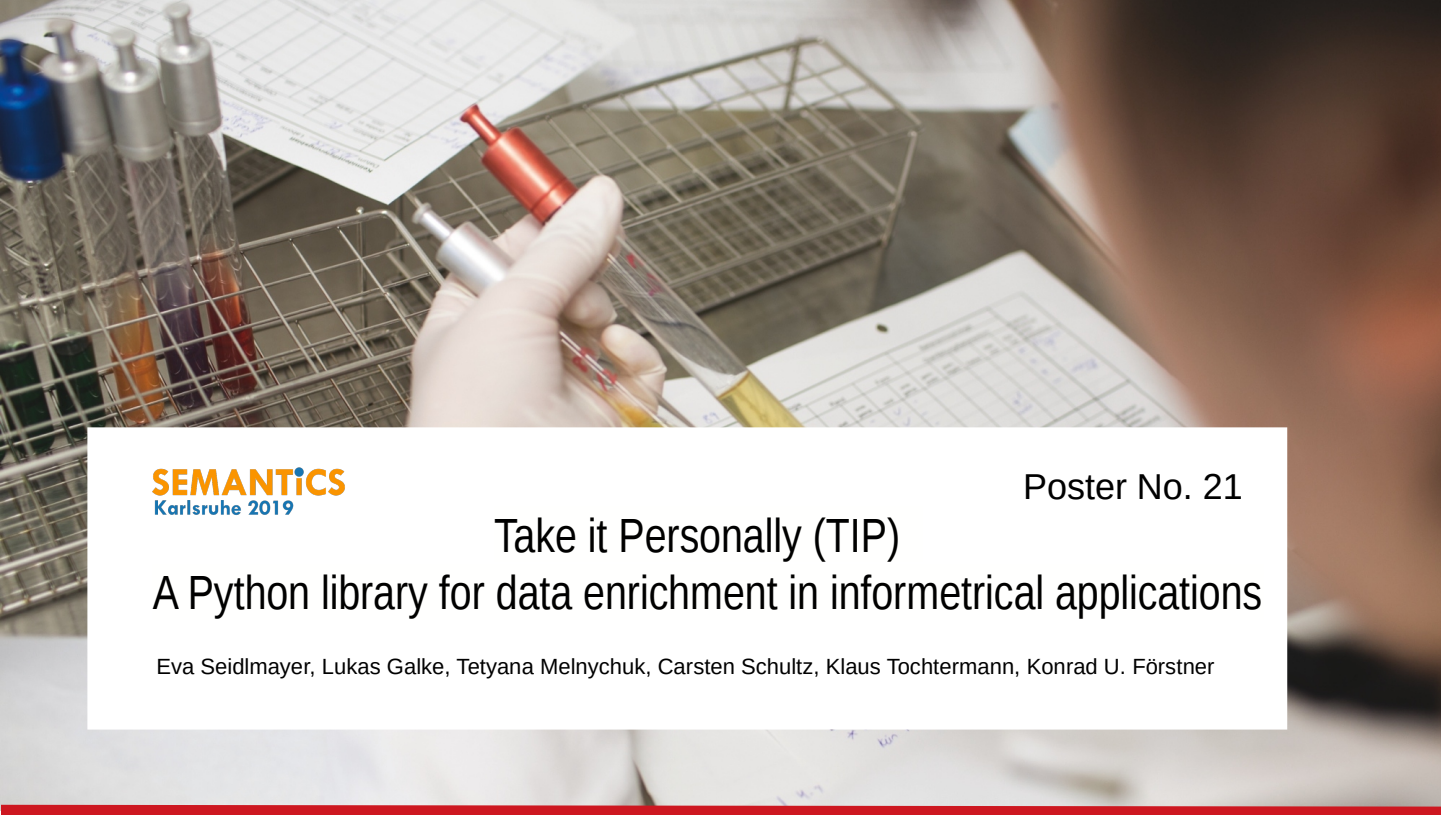
## Architecture

- 1 Deterministic, linguistic analysis of user input
- 2 Classification of the question types
- 3 Template execution via mobile triple store
- 4 Retrieval of the most likely answer based on relatedness of retrieved concepts



# A decentralised Web of Cultural Heritage data





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Karlsruhe 2019

Poster No. 21

## Take it Personally (TIP) A Python library for data enrichment in informetrical applications

Eva Seidlmayer, Lukas Galke, Tetyana Melnychuk, Carsten Schultz, Klaus Tochtermann, Konrad U. Förstner



Bundesministerium  
für Bildung  
und Forschung



Leibniz-Informationszentrum  
Wirtschaft  
Leibniz Information Centre  
for Economics



Christian-Albrechts-Universität zu Kiel



ZB MED

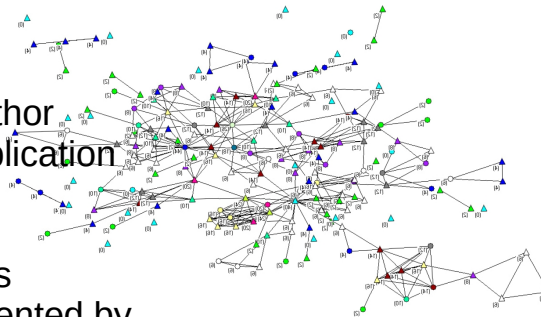
Informationszentrum  
Lebenswissenschaften

# Take it Personally (TIP)

## A Python library for data enrichment in informetrical applications

### Initial problem:

- Scientimetrical research often uses co-author networks or citation networks based on publication metadata.
- Decisions about citations and collaborations influenced by social aspects are not represented by publication metadata and, therefore, a blind spot in the analysis in scientometrics.



```
In [1] from tip import Author
      authors = Author(doi="10.1101/GAD.1239204")
      author = authors[0]
      print(author)

Out [1] Author:
Wikidata-ID: Q2395341
ORCID: 0000-0003-2300-3928
Name: Tasuku Honjo
Affiliation: ['University of Tokyo', 'Osaka University',
'Hirosaki University', 'Kyoto University']
Gender: male
ListedParents: None

In [2] print(author.orcid)
Out[2] 0000-0003-2300-3928

In [3] print(author.orcid.get_works())
Out [3] [{"doi": "10.1111/joim.12708", ...}, {}]
```



### Our solution approach:

- Enrichment of bibliographic metadata with author centralized information on a large scale
- Implementation of this as a Python library

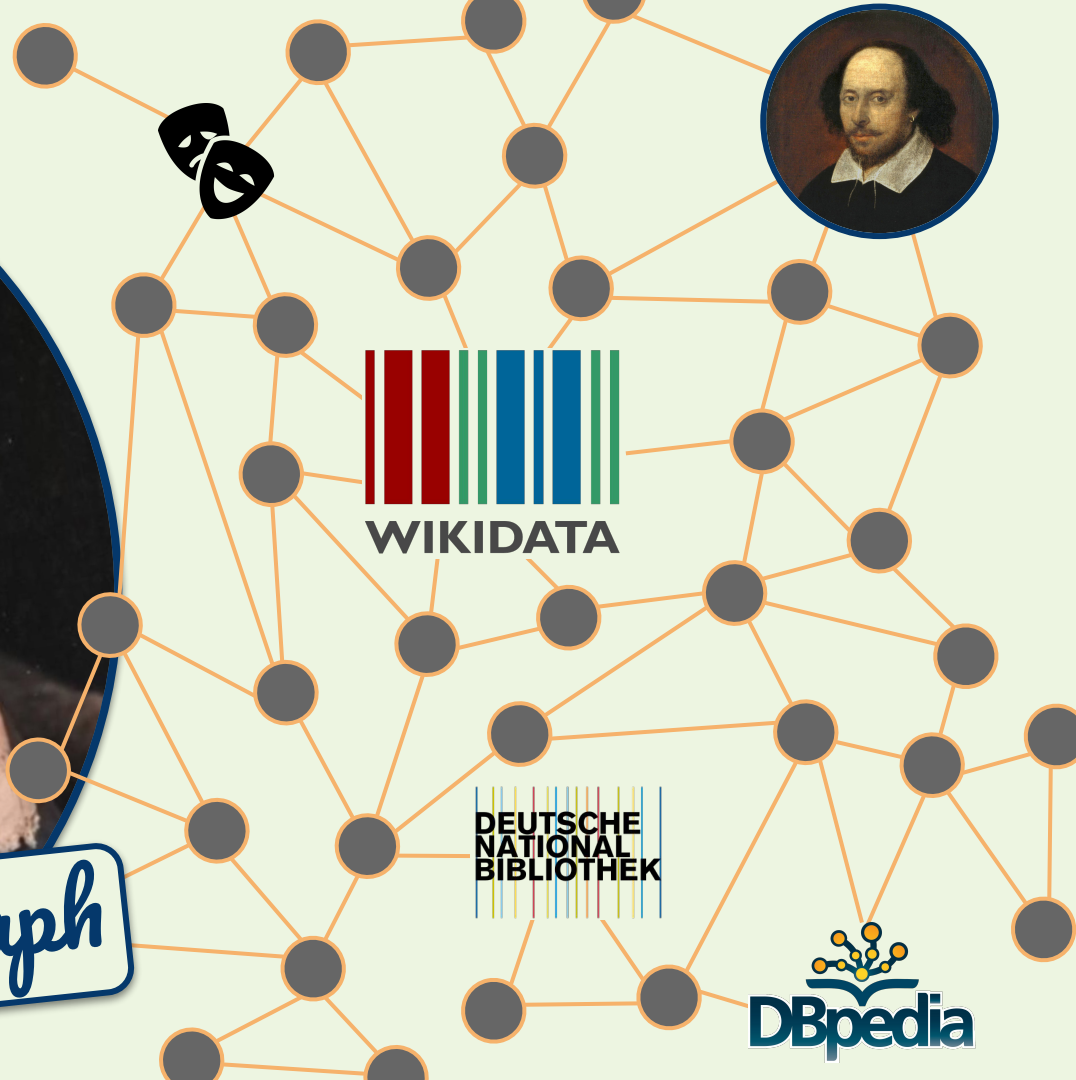
Demo 22

# *Linked Stage Graph*

Tabea Tietz, Jörg Waitelonis, Kanran Zhou, Paul Felgentreff, Nils Meyer,  
Andreas Weber and Harald Sack



Linked Stage Graph



WIKIDATA



DEUTSCHE NATIONAL BIBLIOTHEK





# A Prototype Search Service to Find Neural Networks

Anna Nguyen, Tobias Weller

D23

# FAIRnets



P24

ERROR: POSTER NOT FOUND

P24



**KEEP  
CALM  
POSTER  
NOT  
FOUND**

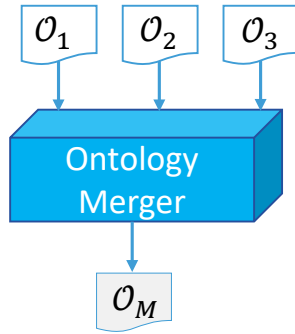
# On Using Subjective Logic to Build Consistent Merged Ontologies

**Samira Babalou, Birgitta König-Ries**

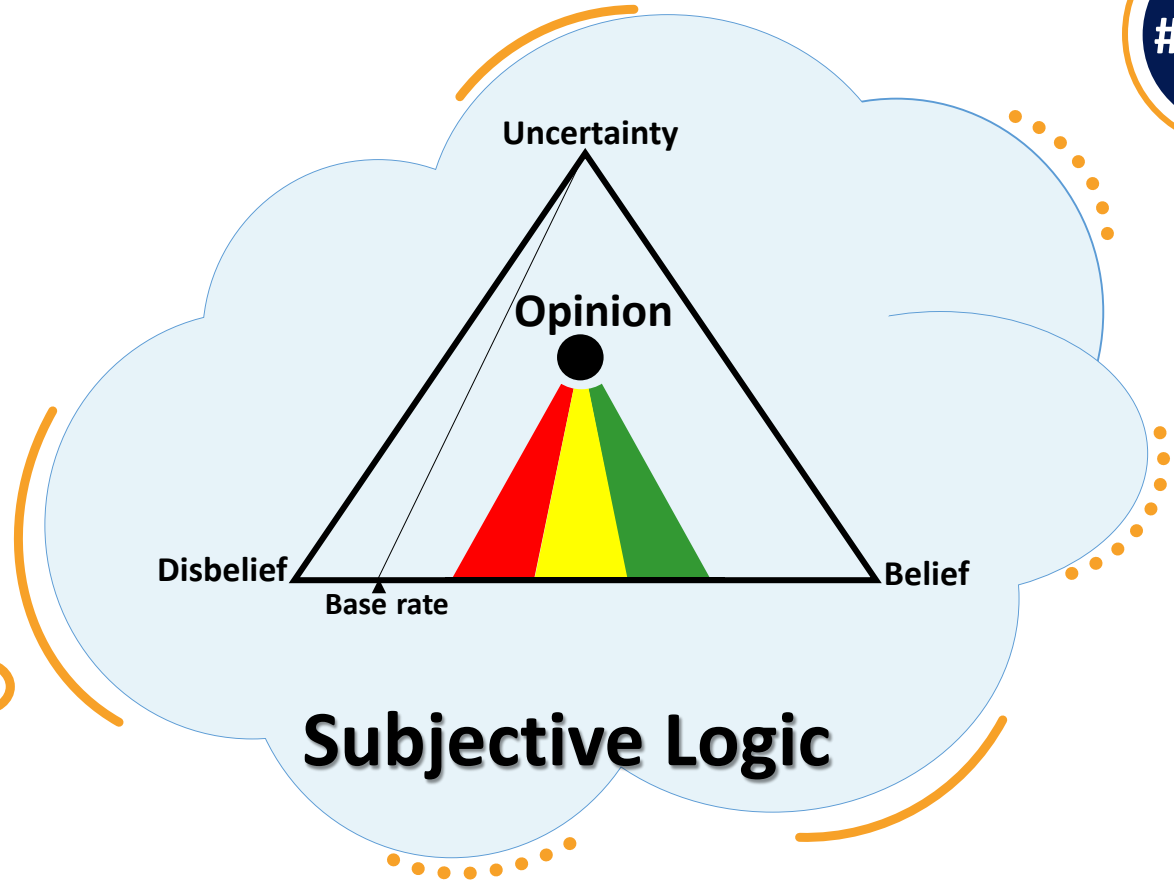
Heinz-Nixdorf Chair for Distributed Information Systems

Institute for Computer Science, Friedrich Schiller University Jena, Germany

(samira.babalou,birgitta.koenig-ries)@uni-jena.de



is inconsistent?



# Validating Danish Wikidata lexemes

**Finn Årup Nielsen**,<sup>1</sup> Katherine Thornton<sup>2</sup> and Jose Emilio Labra Gayo<sup>3</sup>

<sup>1</sup>Cognitive Systems, DTU Compute, Technical University of Denmark

<sup>2</sup>Yale University Library, New Haven, CT, USA

<sup>3</sup>University of Oviedo, Spain

10 September 2019

# Validating Danish Wikidata lexemes

```

start = @<danish-noun>

<danish-noun> {

  dct:language [ wd:Q9035 ]
    // rdf:label "language"
    // rdf:comment "language of lexeme must be Danish" ;

  wikibase:lexicalCategory [ wd:Q1084 ]
    // rdf:label "lexical category"
    // rdf:comment "Lexical category for a noun must be noun" ;

  wdt:P5187 [ @da ]
    // rdfs:label "Danish noun word stem"
    // rdfs:comment "Danish noun must have a Danish word stem" ;

  wdt:P5185 [ wd:Q1305037 wd:Q1775461 ]
    // rdf:label "grammatical gender"
    // rdf:comment "grammatical gender of noun must be either 'er' or 'ne'" ;

  p:P6140 EXTRA a {
    a [ wdno:P6140 ] | ps:P6140 /^[0-9]{8}$/
    // rdf:label "DanNet identifier"
    // rdf:comment "DanNet identifier should either be numeric or alphanumeric" ;
  }
}

```

Wikidata + lexicographic data  
+ validation with ShEx

Definition of ShEx schemas  
for a range of Danish word  
classes: nouns, verbs, pro-  
nouns, numerals.

For instance, plural definite  
non-genitive forms for Dan-  
ish nouns should end with  
“er?ne”.

For discovering missing or  
wrong information and discuss  
data models.



# Knowledge-based Development of Games Using Design Patterns Ontology

Barbara Giżycka, Krzysztof Kutt and Grzegorz J. Nalepa

AKADEMIA GÓRNICZO-HUTNICZA IM. STANISŁAWA STASZICA W KRAKOWIE  
AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY



# Game Design Patterns Ontology

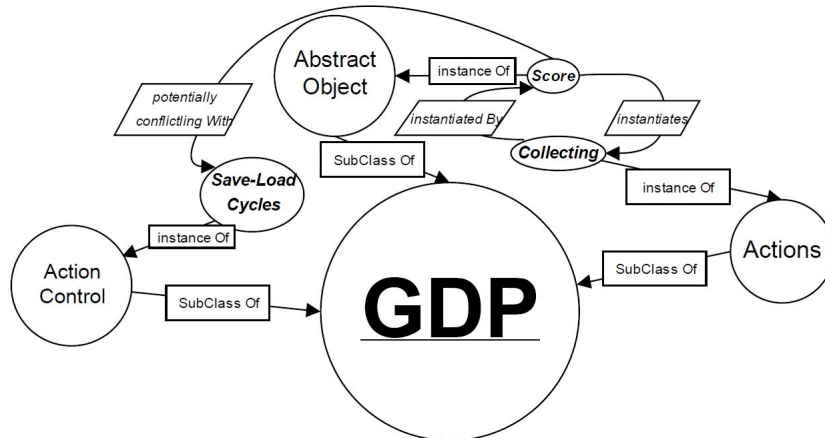
Annotations: Score

Annotations +

rdfs:label [type: xsd:string]  
Score

rdfs:comment [type: xsd:string]  
Score is the numerical representation of the player's success in the game, often not only representing the success but also defining it.

example [type: xsd:string]  
Pac-Man gives players three different possibilities to gain points: eating pills, capturing ghosts while under the effect of a power pill, or collecting the bonus object when it appears. The player's Score is shown in the upper part of the screen next to the current high Score.





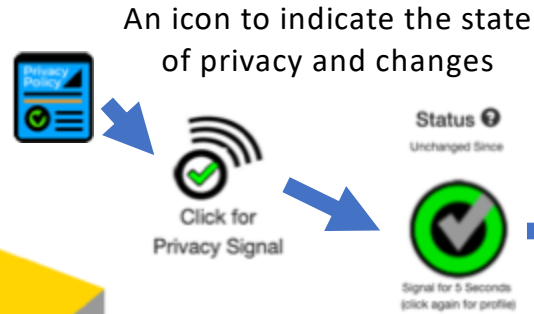
Users: Ever clicked “I Agree” without really reading or agreeing?  
Businesses: How do I convey trust in my privacy commitments?

P28

<https://openconsent.com/>



record the state of your  
privacy via a receipt



OPN: Open Notice  
Receipt Schema

# ONB Labs - An Open Digital Hub of Cultural Heritage

Monika Kovarova-Simecek (FHSTP) Sophie-Carolin Wagner (ONB Labs) Stephan Karner (ONB Labs)

**Oesterreichische Nationalbibliothek**

**ANNO**  
Historische Zeitungen  
und Zeitschriften

**Über ANNO**  
Was ist ANNO?  
10 Jahre ANNO  
FAQs  
Suchen in ANNO  
Drucken aus ANNO  
Kooperationspartner  
Kontakt  
Impressum

**Service**  
ANNODazumal  
Kurzbeiträge zu historischen Zeitungen  
Projektteilnahmen von ANNO  
Zeitungen und Zeitschriften an der ONB  
Bestellung von Jubiläums- und Geburtstagszeitungen  
Weitere  
Zeitungsdigitalisierungsprojekte

**ANNO - Austrian Newspapers Online**  
Historische österreichische Zeitungen und Zeitschriften online

**Listen**  
→ Alphabetische Liste der Zeitungen und Zeitschriften  
→ Jahresübersicht der Zeitungen (1568-1948)  
→ Thematischer Einstieg

**Suchen**  
→ ANNO-Suche: Volltextsuche in historischen Zeitungen (1568-1948)

**Neu bei ANNO**  
→ 49 neue oder ergänzte Titel online! (30.7.2019)  
→ 15 neue oder ergänzte Titel online! (28.06.2019)  
→ 48 neue oder ergänzte Titel online! (31.05.2019)  
→ Lesen Sie mehr...

**Aktuelles**  
→ 21 Millionen Seiten online! (12.12.2018)  
→ 20 Millionen Seiten online! (14.03.2018)  
→ 1947 ist online! (11.01.2018)

**Plansprachen in ANNO**

In den vergangenen Monaten haben wir unseren Bestand mit über 70 neuen Zeitungen und Zeitschriften aus der Sammlung für Plansprachen erweitert.

Tauchen Sie in die Welt von Esperanto, Ido, Interlingue und Volapük ein oder starten Sie einen autodidaktischen Sprachkurs in Esperanto mit den Zeitschriften "The Esperanto Monthly" oder "Die Weltsprache Esperanto" noch heute! Der schnellste Weg zu den Digitalisaten führt über unseren thematischen Einstieg bei den Themen "Esperanto" und "Plansprache".

**Bildquelle:** German-Austria Esperantisto. Organ für die internationale Hilfssprache Esperanto. 1910. Mai. S. [1] ANNO/ONB.

ANNO Startseite · Über uns · Kontakt · Impressum  
Copyright © 2011 Österreichische Nationalbibliothek

2003

156  
8



2019

194  
7

1,258 titles

1,466,451

editions

21,000,000 pages

# ONB Labs - An Open Digital Hub of Cultural Heritage

Monika Kovarova-Simecek (FHSTP) Sophie-Carolin Wagner (ONB Labs) Stephan Karner (ONB Labs)

## Data Sets

View, use and reuse the digital data sets of the ONB Labs



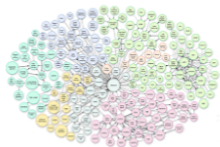
### Historic Newspapers

Newspapers from 1860 through 1877  
218,000 issues, 2.100.000 scanned pages



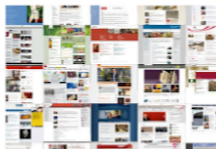
### Historic Postcards

Postcards from around 1900 through 1925  
34.800 scanned postcards



### Linked Open Data

Metadata for our digital assets



### Webarchive Austria

Metadata for 2M archived webpages starting 2009



### Catalogue

Bibliographic metadata from the Catalogue



### Pamphlets 1848

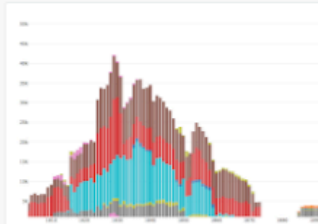
Pamphlets of the 1848 revolution in the Habsburg  
Monarchy

## Tools



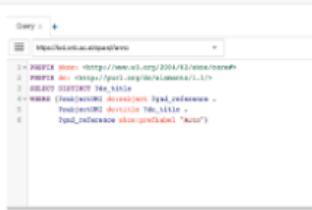
### Create Collections

Use this IIIF API to view Images and create  
collections



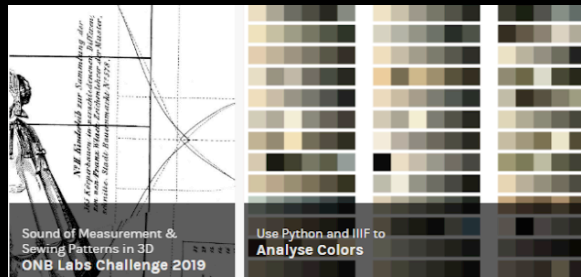
### Create Graphs

Use Plotly and Jupyter Notebooks to create  
Interactive graphs



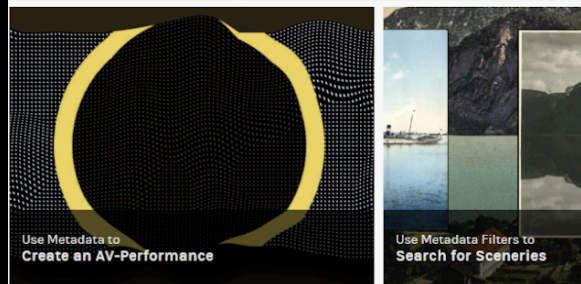
### SPARQL

Use SPARQL to query our open metadata and link  
the results to other databases



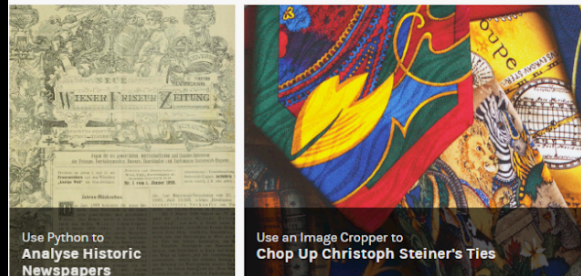
Sound of Measurement &  
Sewing Patterns in 3D  
ONB Labs Challenge 2019

Use Python and IIIF to  
Analyse Colors



Use Metadata to  
Create an AV-Performance

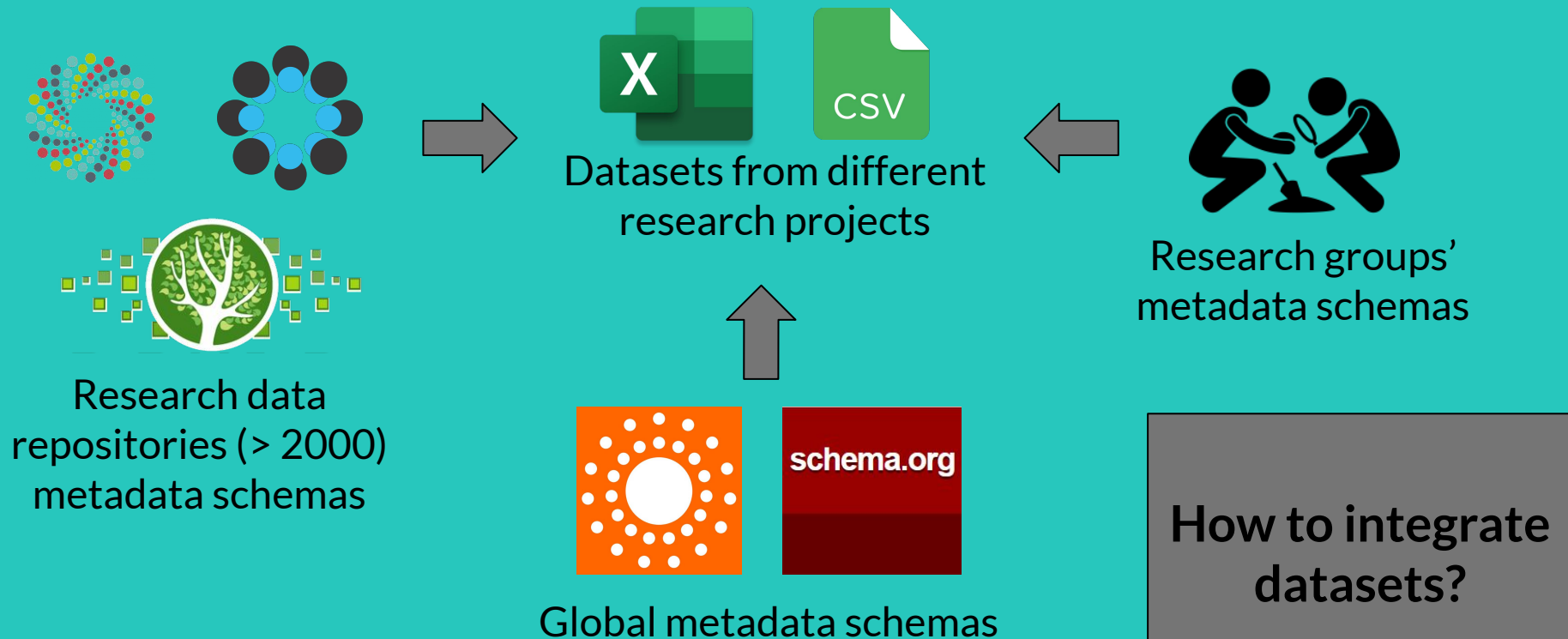
Use Metadata Filters to  
Search for Sceneries



Use Python to  
Analyse Historic  
Newspapers

Use an Image Cropper to  
Chop Up Christoph Steiner's Ties

# P30: A standard language for the description of datasets obtained in experimental studies



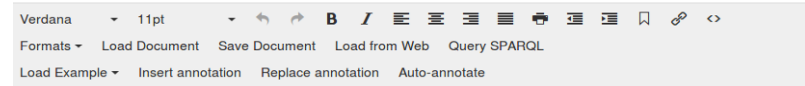
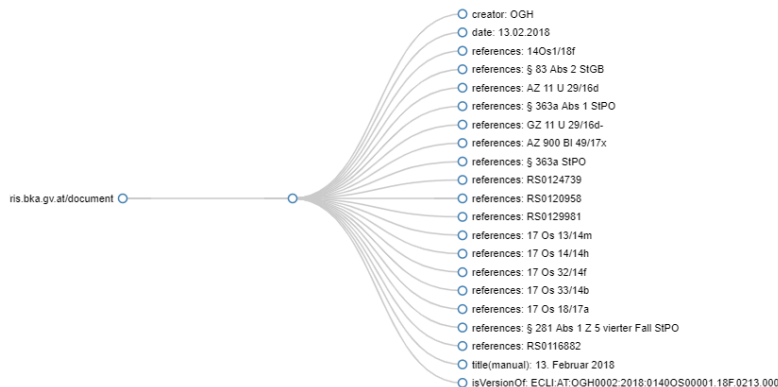
# Automatic Document RDFa Annotator (ADORN)



Martin Beno, Erwin Filtz, Sabrina Kirrane, Axel Polleres

# Annotating web documents made easy!

- Rich text editor with a friendly graphical user interface.
- Automatically inserts RDFa metadata based on information extracted from the text using NLP.
- Multi-platform application based



## Gericht

OGH

## Entscheidungsdatum

28.04.1987

## Geschäftszahl

506311/87

## Kopf

Der Oberste Gerichtshof hat durch den Senatspräsidenten des Obersten Gerichtshofes Dr. Marold als Vorsitzenden und durch die Hofräte des Obersten Gerichtshofes Hon.Prof.Dr. Griehsler, **Dr. Jensek**, **Dr. Klimes** und **Dr. Kodol** als Richter in dem Auslieferungsverfahren der protokollierten Firma Elisabeth N\*\*\* Gesellschaft m.b.H. & Co, Broilstraße 39, 6844 Altach, vertreten durch DD: Hubert Kinz, Rechtsanwalt in Bregenz, infolge Rekurses der Ausgleichsschuldnerin gegen den Beschluß des Oberlandesgerichtes Innsbruck als Rekursgerichtes vom **6. März 1987**, GZ **I R 53/87-53**, womit der Beschluß des Landesgerichtes Feldkirch vom **29. Dezember 1986**, GZ Sa 17/86-49, unter Rechtskraftvorbehalt aufgehoben wurde, folgenden

Beschluß

gefaßt:

## Spruch

Der Rekurs wird zurückgewiesen.

## Text

Begründung:

Im Ausgleich unterwarf sich die Ausgleichsschuldnerin bis zur Erfüllung des Ausgleichs der Überwachung durch den zum Sachwalter der Gläubiger zu bestellenden bisherigen Ausgleichsverwalter und erteilte ihm die unwiderrufliche Vollmacht zur Verwertung des gesamten Vermögens, das ihm nach Annahme des Ausgleichs übertragen werde. Der am 30. Juli 1986 zustande gekommene Ausgleich wurde vom Erstgericht am **6. Oktober 1986** nach **§ 49 Abs 1 AO** bestätigt. Der Sachwalter der Gläubiger beantragte am **22. Dezember 1986**, ihm auf seinen Anspruch auf Ersatz seiner Barauslagen sowie auf eine Belohnung für seine Mithewaltung einen Vorschuß von S 50.000,- zu bewilligen.

Das Erstgericht wies den Antrag zurück. Der Sachwalter habe keinen Anspruch auf Vorschüsse, weil nach **§ 39 Abs 6 AO** für seine Ansprüche nur **§ 33 Abs 2** und **§ 33 Abs 4 AO** nicht aber **§ 33 Abs 3 AO** anzuwenden seien, wonach auf die Ansprüche des Ausgleichsverwalters vom Ausgleichsgericht nach Vermahnung des Gläubigerbeirats

P32



**KEEP  
CALM  
POSTER  
NOT  
FOUND**

P32

ERROR: POSTER NOT FOUND



# Visual Query Environment over RDF Data

*Kārlis Čerāns, Jūlija Ovčiņņikova, Lelde Lāce,  
Jūlija Hodakovska, Aiga Romāne, Mikus Grasmanis,  
Elīna Kalniņa, Artūrs Sproģis, Agris Šostaks*

**InProceedings**

A\_count

title

order by A\_count DESC



dc:creator

A\_count<-count\_distinct(.)

**Person**

isPartOf.isProceedingsOf

[https://w3id.org/scholarlydata/  
conference/iswc2018](https://w3id.org/scholarlydata/conference/iswc2018)

PREFIX :

<<https://w3id.org/scholarlydata/ontology/conference-ontology.owl#>>

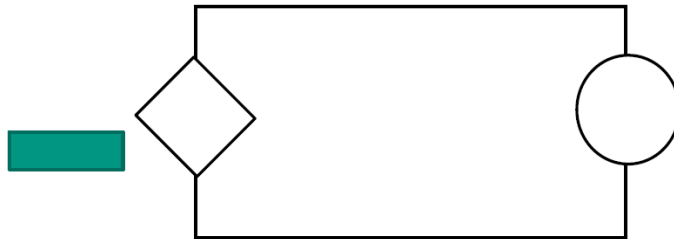
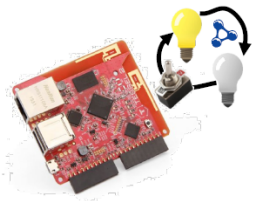
PREFIX dc: <<http://purl.org/dc/elements/1.1/>>

```
SELECT ?A_count ?title WHERE{
  ?InProceedings a :InProceedings.
  {SELECT ?InProceedings (COUNT(DISTINCT ?Person) AS ?A_count)
    WHERE{
      ?Person a :Person.
      ?InProceedings dc:creator ?Person.}
    GROUP BY ?InProceedings}
  OPTIONAL{?InProceedings :title ?title.}
  ?InProceedings :isPartOf/:isProceedingsOf
    <https://w3id.org/scholarlydata/conference/iswc2018> .}
ORDER BY DESC(?A_count)
```

*List titles of all papers from the iswc 2018 conference, together with their author count (sort descending).*

# Controlling Internet of Things devices with Read-Write Linked Data Interfaces using Data-Driven Workflows

SEMANTiCS 2019: Nico Aßfalg, Leonard Nürnberg, Benjamin Jochum, Tobias Käfer



```
:Guard
  rdfs:subClassOf :Conditional .

:MilestoneModel
  rdfs:subClassOf :Instantiable .

:MileStoneInstance
  rdfs:subClassOf :Instance .

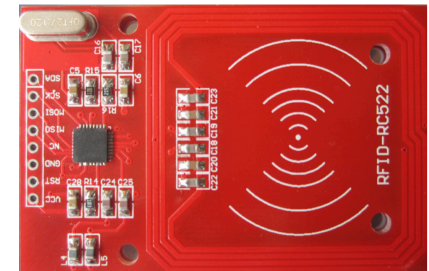
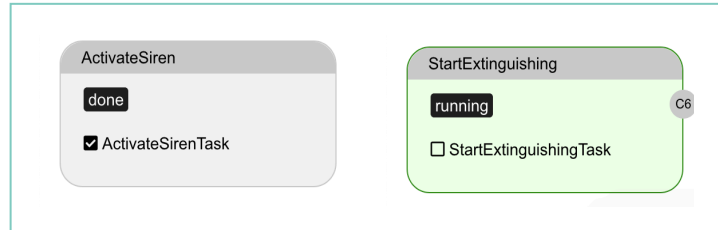
# Properties
:isInstanceOf
  a rdf:Property ;
  rdfs:domain :Instance ;
```

# Main components



# Idfu

 kaefer3000 / ldbbc





FAKULTÄT  
FÜR INFORMATIK  
Faculty of Informatics



universität  
wien



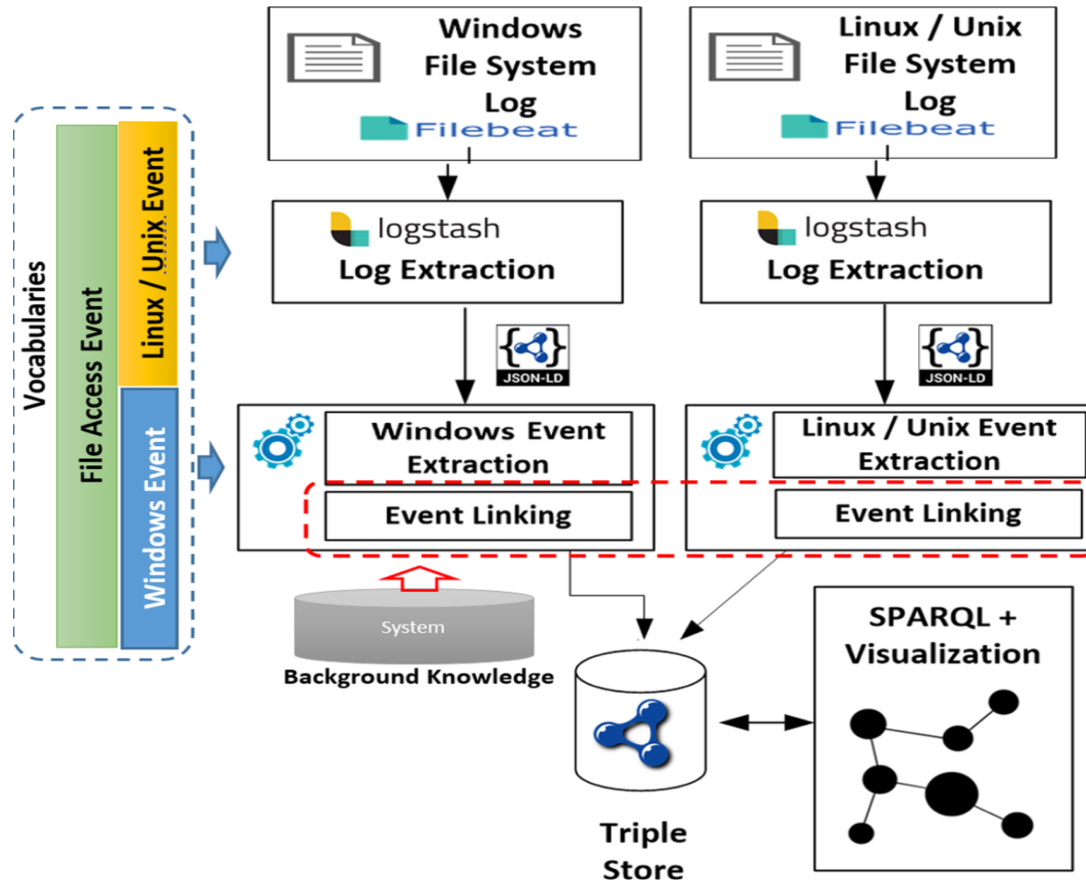
# Semantic Integration and Monitoring of File System Activity

**Kabul Kurniawan<sup>1,3</sup>, Andreas Ekelhart<sup>1,2</sup>, Elmar Kiesling<sup>1</sup>,  
Agnes Fröschl<sup>1</sup>, and Fajar Ekaputra<sup>1</sup>**

<sup>1</sup>) TU Wien, Favoritenstraße 9-11, Vienna, Austria

<sup>2</sup>) SBA Research, Floragasse 7, Vienna, Austria

<sup>3</sup>) University of Vienna, Währingerstraße 29, Vienna, Austria

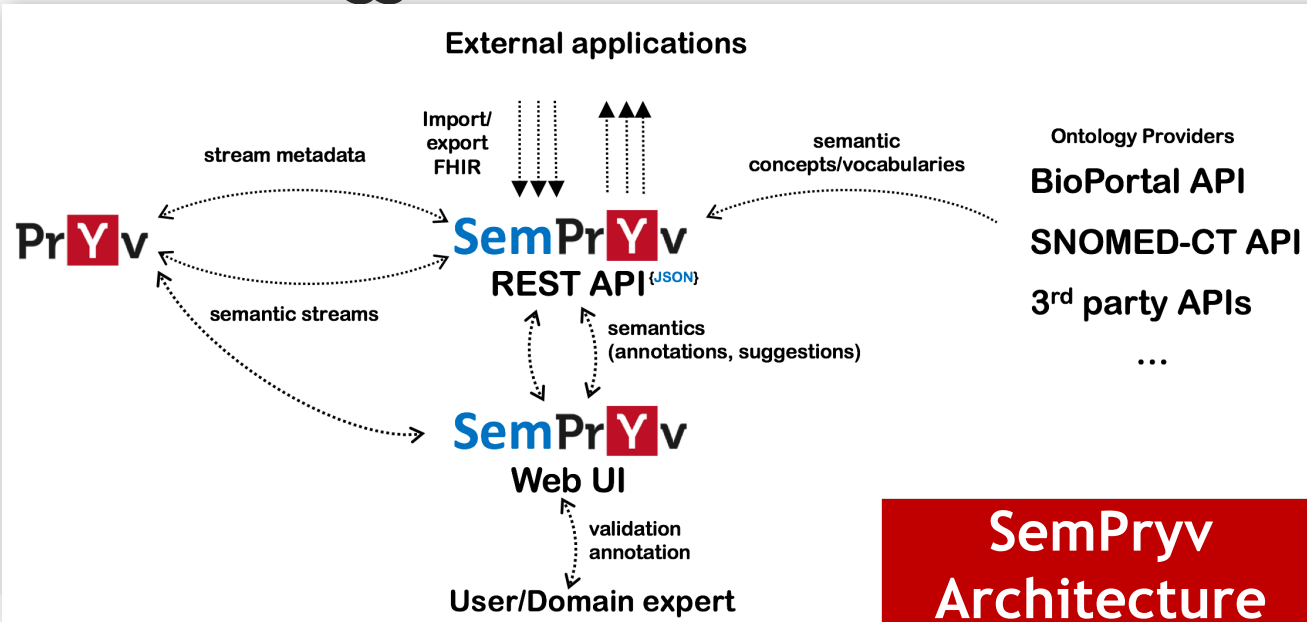


# SemPryv

Semi-automatic Semantic Enrichment  
of Personal Data Streams

36

## Solution: suggestions + automatic annotations



- Jean-Paul Calbimonte<sup>1</sup>
- Fabien Dubosson<sup>1</sup>
- Michael Schumacher<sup>1</sup>
- Ilia Kebets<sup>2</sup>
- Pierre-Mikael Legris<sup>2</sup>

<sup>1</sup>University of Applied Sciences and Arts Western Switzerland HES-SO

<sup>2</sup>Pryv SA

PrYv  
E-HEALTH DATA MIDDLEWARE

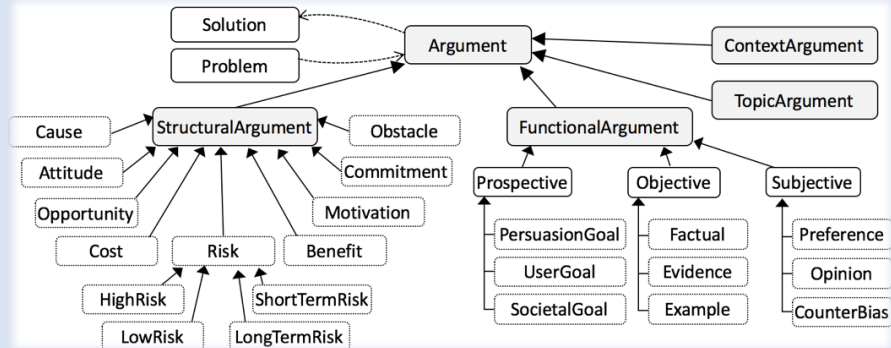
Hes·SO VALAIS WALLIS  
Σ π ≈ &



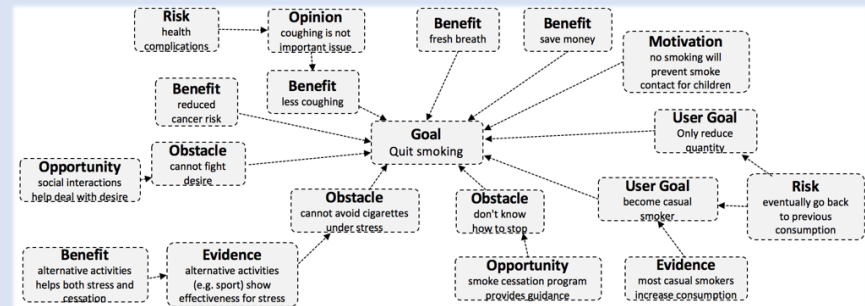
# Towards Semantic Models for *Profiling and Behavior Change* in eHealth Applications

## Ontology-based Approach:

Guide the implementation of *personalized behavior change* programs, using *ontological models* as a foundation layer.



- 1 Modeling of behavior change models
- 2 Modeling of persuasion arguments
- 3 Modeling interactions with the user





# GMRs: Reconciliation of Generic Merge Requirements in Ontology Integration

**Samira Babalou, Birgitta König-Ries**

Heinz-Nixdorf Chair for Distributed Information Systems

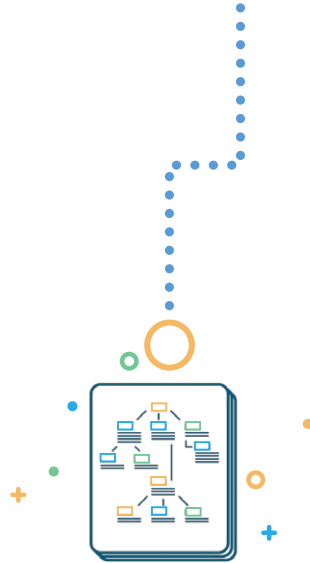
Institute for Computer Science, Friedrich Schiller University Jena, Germany

(samira.babalou,birgitta.koenig-ries)@uni-jena.de

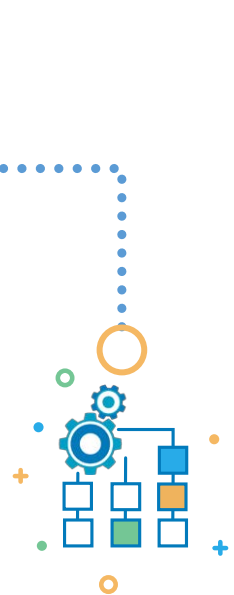
# Ontology Merge Requirement



Requirement



Classification



Compatibility

# The Hubs and Authorities Transaction Network Analysis using the SANSA framework

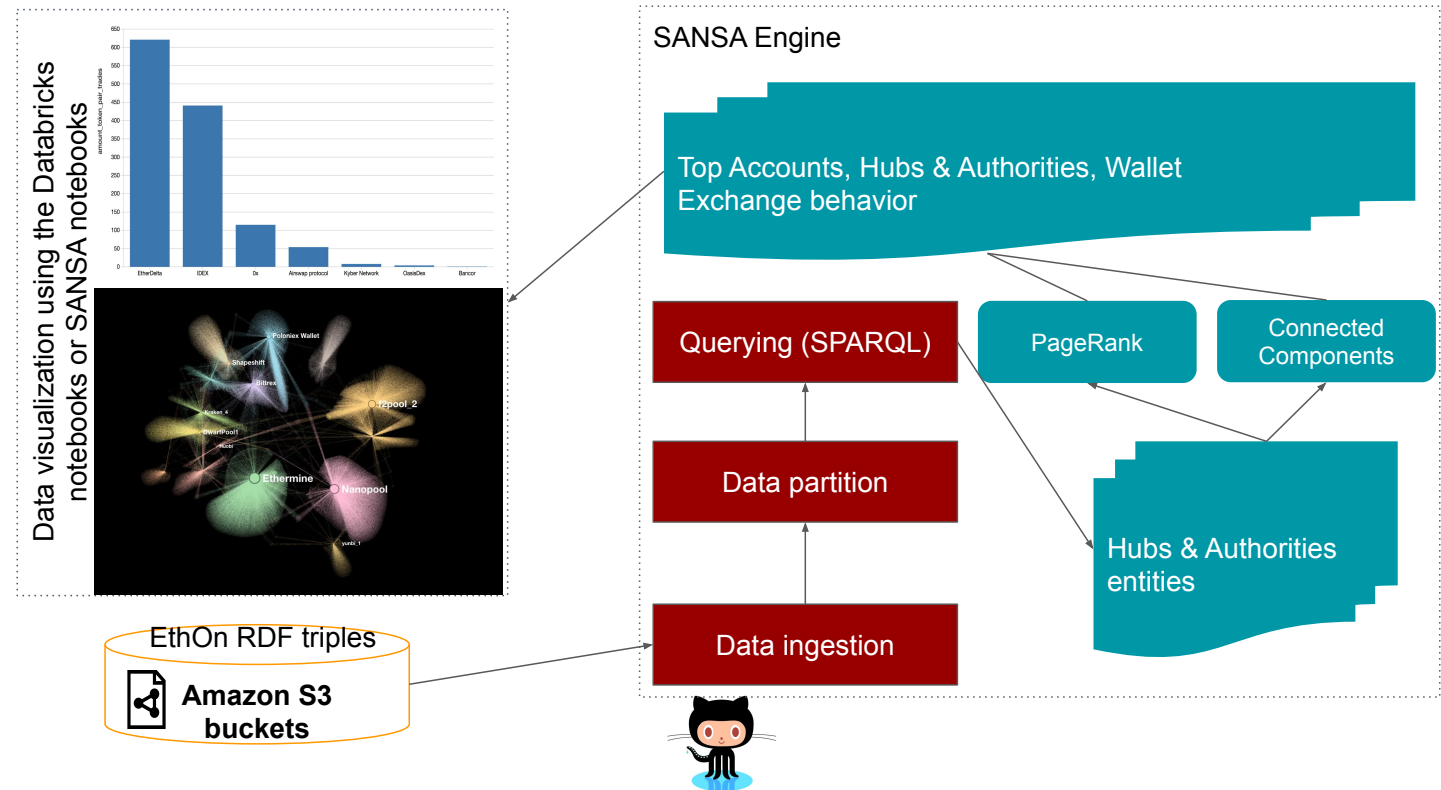
P39

Danning Sui, Gezim Sejdiu, Damien Graux, and Jens Lehmann

**SEMANTiCS**  
Karlsruhe 2019



# P39 The Hubs and Authorities Transaction Network Analysis using the SANSA framework



<https://github.com/SANSA-Stack>



# Transfer Learning for Biomedical Named Entity Recognition with BioBERT

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Can you achieve **high performance** on Adverse Drug Reaction (ADR) recognition using only a **small number** of training data?

## Traditional methods

Dictionary

CRFs

BiLSTM

**VS**

## Our approach



Fine-tune **BioBERT**

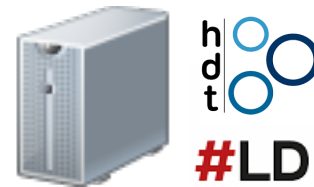
# Triple Pattern Join Cardinality Estimations over HDT with Enhanced Metadata

Elena Wössner, Chang Qin, Javier D. Fernández, Maribel Acosta

INSTITUTE AIFB – WEB SCIENCE



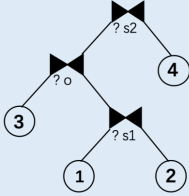
Client  
Engine



Triple Pattern  
Fragment Server

# Triple Pattern Join Cardinality Estimations over HDT with Enhanced Metadata

**Key Challenge:**  
Devise efficient query plans

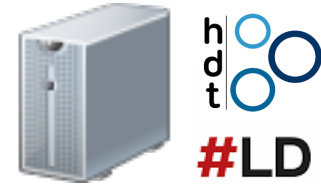


Client  
Engine

?d1 rdf:album ?o .



**Metadata:**  
Cardinality: 28.634



Triple Pattern  
Fragment Server

## Our contributions:

### 1. Novel triple pattern statistics

Distinct Subjects:	26.574
Distinct Predicates:	1
Distinct Objects:	16.408



### 2. Novel cost model

