

Dresden / SW Summer School

- Introduction Pascal Hitzler
 - LOD + Geospatial Info → Kryptol

Rudolph: Introduction

- subj. Uri or BLnote
- pred. Uri
- Obj: Uri or Blank nodes or Literals

Twelve vs. XML

- reverse of xsd datatypes

XMLSchema#string
#date

- canonical values

- rdf:XMLLiteral

- multiple Relationship

- Blank nodes...

Beispiel Chutney Recipe

- rdf:nodeID = "id1"

Lists: open lists

closed lists

Brader: Description Logic

TRBox - def. terminology

ARBox - static facts about a world

→ ALC

- two-variable fragment
 - guarded fragment
 - Relation to Modal Logic
-

Rudolph: RDFS

- `rdf:type` ex: `Textbook`
- `Textbook` `rdf:type` & `rdfs:Class`
`rdfs:subClassOf`

class hierarchy in RDFS → zoologie

predefined classes:

- `rdfs:Resource`
- `rdfs:Property`
- `rdfs:List` / `Alt`, `Contain`

predefined

`rdf:Property`

`rdfs:domain`

`rdfs:range`

ex: `publishedBy` → Publ.
 " " → ^{inst.} `Public`

always pick the most abstract

class for range statements

Reflexion

- proposition about proposition.

= NL = that

- The detective suspects the key willid

- schon mit RDF modellierbar ²

→ theory-node

Hitzler:

- Roles = Properties

- OWL - DL - SROIQ (D)

- Syntax: -RDF/XML Datatype

- Turtle

- Funct. Style Syntax

- Manchester ^u

- OWL/XML Syntax

- range $\rightarrow$ notwendig zu einer Klasse gehörend

Owl: import

- declaration of classes, properties etc.

- Punning: same URI can stand for indiv. + class

OWL 2 DL $\Leftrightarrow$ OWL 2 Full

$\downarrow$
RDF

also: OWL - FL

- QL

- RL

Ontologies + Rules

OWL 2 RL $\leftrightarrow$ datalog (Rules)

M. Krötzsch $\rightarrow$ OWL

- LOD Cloud $\rightarrow$ OWL RL

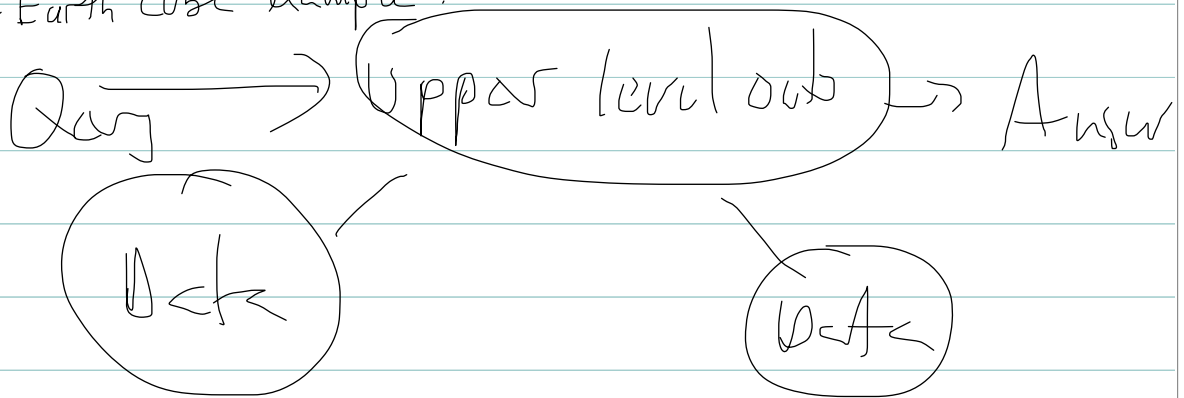
Rule based Instance Retrieval in RL = saturation, deductive closure

BGP = basic graph pattern

Hitzler:

Ontology Design Patterns Vertical data integr.

- Earth Cube example...



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- Micro-ontologies
 - automated ontology alignment
 - vocabulary maps / Geoscience
 - non-monotonicity
-

on top → reasoning syst
→ Rule rewriting

Lehmann: Linked Data Lifecycle

- 4 principle of linked data
- 303 URI redirect
- hash URI - fragment identifier → small documents
- 5* Plan

Beispiel: dbpedia

mappings.dbpedia.org

- dbpedia mobile

- " Wiktionary

Wiktionary.org

.dbpedia.org

Question: sustainability consistency → stable URIs/URLs ...

→ using Data dump

- using Spargel endpoint

Knowledge extraction

performance 2-10 times slower than relational data

- Authoring

- Tiki, Drupal

- Semantic Media Wiki, Kiwi

Linking

- SILK, LIMES, COMES

- Raven, Eagle, SILK GP → machine learning

Enrichment

- ontology debugging

Quality analysis

Evolution

- refactoring

- Tools:

- protégé - PROMPT

EvoPst - SpargL

PstOMat

Exploration

- faceted Browsing

- visual Query Builder / Professorenkutsch Leipzig

stack.linkdata.org

- debia - pack

- knowledge Extraction

- schema from source

- database

- rd5 direct - mapping /

- mapping: R2RML, SML

- XML

- can be converted to RDF

Ex: Spargify

LGD - tool

2. Woche

Lehmann: LOD

- LINES Framework (Interlinking)
- Minkowski Distance
- HR3
- COALA

- Content Enrichment

3 Steps to get a Schema:

- DL Learner Framework

M. Knorr: unifying Logic

- non-monotonic Extensions?

Lehmann: repair LOD

Pellint $\rightarrow$ check LOD

information resource $\leftrightarrow$ non-informet. resources

- inconsistent Ontology
- unsatisfiable class

ore-tool.net $\rightarrow$ Tool!

- Querying:

- specific interface
- Faceted Brows.
- Visual

- faceted browsing
- Facete → Browser
- BOA patterns
- WGS 84 (Linked Data) Geopreference

Knorr:

NolTR for OWL 2 EL

- first non monotonic plug-in for Protogé

- Kristijf Janovic: Geo-Semantics

- geonames.org
- factforge

- Ordnance Survey Linked Data Generation

"Hausdorff Distance"

ESRI's Arc GIS

objects vs continuous fields

Eiter: Rules + OWL

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- Protogé

— Cobol / Fortran → Fossil

— Revolution Principle (1965)

— Prolog

— geosparql ...

— Region Connection Calculus 8

— Intersection Model

| — Simon Rainer

| — Sarah Rees Jones / Univ York

| — "Digging into Data"

| — Tony Karpinen - 2008

| — Peter Bowle / Harvard

ArchiMate → Metamodel for Enterprise

tool: Archi...

bww → ontology mapping

- EITER

- OBDA - Ontology based database access

- conjunctive query

- Union of Conj. Query

- First Order

- Datalog

- Boolean query