Grup de Recerca en Interacció
Persona Ordinador i Integració de Dades
fundat pel Dr. Jesús Lorés

Publishing Linked Open Data about University Scientific Outputs using the VIVO Ontology

Experience at Universitat de Lleida, Spain

Roberto Garcia, Jordi Virgili-Gomá and Rosa Gil

Supported by project InDAGuS
Infrastructures for Sustainable Open Government Data with Geospatial Features
Spanish Government TIN2012-37826-C02

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Motivation

- Research annual reports
  - University, Research Center, Research Group,…
- Individual CVs
  - Project proposals, research productivity assessments,…
- Institutional Web sites
  - Department, Research Group,…

Requirements

- Articles, conference papers, projects,…
- Focus on articles, their **impact** and **QUARTILES**
  - Example: Spanish research assessment each 6 years, criteria Computer Science area:
    - Considering JCR impact factor for publication year (or last available):
      - **2 Q1/Q2 plus 1 Q3** or
      - **1 Q1/Q2 plus 3 Q3** or
      - **5 Q3**

“State of the Art”

GRUP DE RECERCA EN INTERACCIO PERSONA ORDINADOR I INTEGRACIO DE DADES (GRIHO)

	Others					Total	EFTD	Level of CV update		
					Fsh. H.			C.V. CUDG	curricul@	Upd.2014+2015
T					0	8	8	8	8	6

	2010	2011	2012	2013	2014	2015	TOTAL
**	1	0	0	0	0	0	1
**	1	4	2	3	1	0	16
**	1	1	5	3	3	0	20
**	0	0	0	0	1	0	2
**	0	0	0	0	0	0	1
**	0	1	0	0	0	0	1
**		1	1	0	0	0	5

			2012	2013	2014	2015	TOTAL
**			4	4	6	3	80
**	3		3	2	0	0	57
**	22		21	17	15	1	314
**	27		27	15	11	0	284

	007	2008			11	12	2013	2014	2015	Total
P	6	11	6	5	0	3	2	5	2	45
Σ	1,312	8,156	4,821	2,999	--	1,865	0,794	2,903	2,674	25,745
M	0,219	0,741	0,803	0,600	--	0,622	0,397	0,581	1,337	0,572

Information about impact factors of years 2014-2015 is taken from the last available year: 2013

GREC: Dades de Recerca (UDL)

webgrec.udl.cat/cgi-bi

**Publicacions en r

Research group: G
INTERACCIO PERS
INTEGRACIO DE DA

<< < 1 2

Id. GREC: 011657
Perdrix F, Gil R, Oliv
as a Newspaper Me
Journal: Journal Of Web Semantics

Id. GREC: 012582 Year: 2008 Authors: García R, Gimeno J M, Perdrix F, Gil R, Oliva M. Title: A Platform for Object-Action Semantic Web Interaction Journal: Lecture Notes in Artificial Intelligence

Id. GREC: 012583 Year: 2008 Authors: García R, Gimeno JM, Perdrix F, Gil R, Oliva M. Title: The

GREC: Dades de Recerca (UDL)

webgrec.udl.cat/cgi-bin/3DADREC/critem.cgi?TEXT=&PID=24...

**Publicacions en revistes

Id. GREC: 011657

Authors: García R, Perdrix F, Gil R, Oliva M.

Title: The Semantic Web as a Newspaper Media Convergence Facilitator

Journal: 913834 - Journal Of Web Semantics (NLD)
ISSN: 1570-8268

Volume: 6 Initial page : 151 Final page: Year: 2008 Key: **Article d'investigació

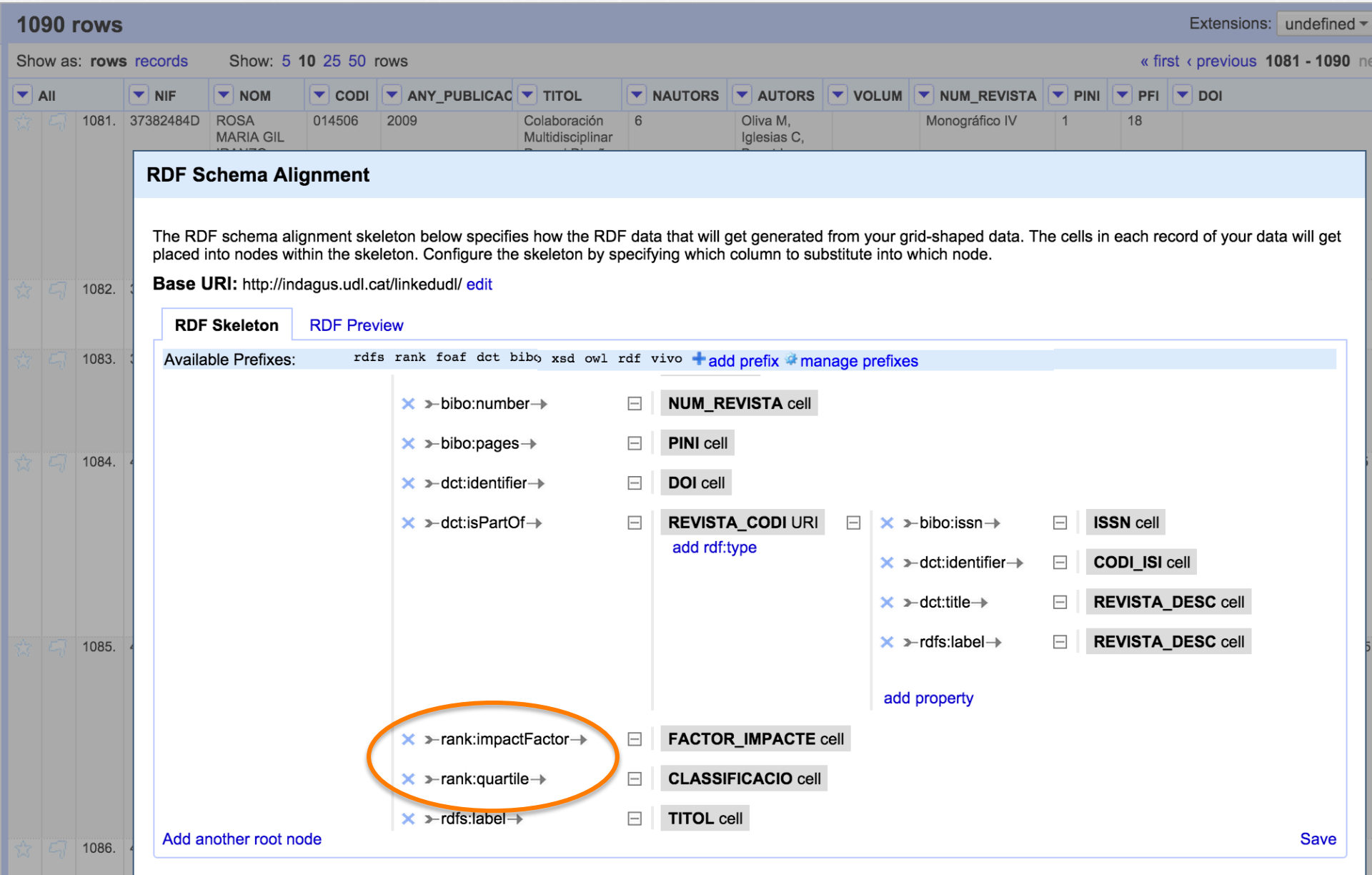
But no Impact Factor or Quartile!!!

Starting Point

- However, all this data **available** from **institutional databases**
  - Requested and provided as **XLS** dumps
  - Then mapped to **RDF** using **OpenRefine**

	A	D	E	G	H	J	K	L	M	N	O	P	Q	R	S	T	U
1	NIF	ANY_PUBL	TITOL	AUTORS	VOLUM	PINI	PFI	DOI	TIPUS	TIPUS_DE	ISSN	REVISTA_(	REVISTA_[	CODI_ISI	FACTOR_I	CLASSIFICACIO	
2	18043241V	2006	Primera Eta	Lorés J, Gc	1				PA	Article en p	0868-4952	912940	Informatica	12940	,22	D	
3	18043241V	2010	A Semantic	García, R.;	4	386	395		AA	Article d'inv	1751-8806	914111	let Software	14111	,67	C	
4	18043241V	2010	Building a U	García, R.;	13	143	167	10.1007/s1	AA	Article d'inv	1386-145X	913316	World Wide	13316	1,00	C	
5	18043241V	2008	Testing We	González M	14	1513	1528		AA	Article d'inv	0948-695X	912787	Journal Of	12787	,49	D	
6	47683626A	2012	Green roofs	Pérez G, C	30	452	460	10.1016/j.e	AA	Article d'inv	1876-6102	203061	Energy Pro				
7	47683626A	2014	PCM therm	Moreno P, (	82	399	405	10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
8	47683626A	2014	An effective	Tay NHS; E	131	377	385	10.1016/j.a	AA	Article d'inv	0306-2619	901187	Applied En	01187	5,26	A	
9	47683626A	2014	Modeling p	Dutil Y, Rou	61	132	135	10.1016/j.re	AA	Article d'inv	0960-1481	909378	Renewable	09378	3,36	B	
10	47683626A	2014	Life cycle a	Cabeza LF	29	394	416	10.1016/j.rs	AA	Article d'inv	1364-0321	910965	Renewable	10965	5,51	A	
11	47683626A	2014	The use of	Moreno P;	39	1	13	10.1016/j.rs	RR	Review	1364-0321	910965	Renewable	10965	5,51	A	
12	47683626A	2014	Experiment	Castell A; F	81	59	71	10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
13	47683626A	2015	PCM incorp	Navarro L,	103	70	82	10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
14	47683626A	2015	Control of a	de Gracia A				10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
15	47683626A	2014	Green roofs	Coma J, Pé	7	841	849	10.1007/s1	AA	Article d'inv	1570-646X	916866	Energy Effi	16866	,96	C	
16	47683626A	2015	Energy per	de Gracia A	91	37	42	10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
17	47683626A	2015	The therma	Perez G, Vi				10.1007/s1	AA	Article d'inv	1570-646X	916866	Energy Effi	16866	,96	C	
18	47683626A	2015	A simple m	de Gracia A				10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
19	47683626A	2015	Thermal be	Navarro L,				10.1007/s1	AA	Article d'inv	1570-646X	916866	Energy Effi	16866	,96	C	
20	47683626A	2014	Environmer	Rincón L, C	74	22	30	10.1016/j.b	AA	Article d'inv	0360-1323	904536	Building an	04536	2,70	A	
21	47683626A	2014	Numerical r	Zsembinszk	67	16	23	10.1016/j.a	AA	Article d'inv	1359-4311	909143	Applied The	09143	2,62	A	
22	47683626A	2015	Thermal en	Navarro L,				10.1016/j.re	AA	Article d'inv	0960-1481	909378	Renewable	09378	3,36	B	
23	47683626A	2013	Stratificatio	Oró E, Cas	109	476	487	10.1016/j.a	AA	Article d'inv	0306-2619	901187	Applied En	01187	5,26	A	
24	47683626A	2013	Thermal an	de Gracia A	65	508	515	10.1016/j.e	AA	Article d'inv	0378-7788	904600	Energy and	04600	2,47	A	
25	47683626A	2013	Building int	Álvarez S, (	109	514	522	10.1016/j.a	AA	Article d'inv	0306-2619	901187	Applied En	01187	5,26	A	
26	47683626A	2013	Numerical r	de Gracia A	22	539	549	10.1016/j.rs	AA	Article d'inv	1364-0321	910965	Renewable	10965	5,51	A	
27	47683626A	2013	Evaluation	Rincón L, C	109	544	552	10.1016/j.a	AA	Article d'inv	0306-2619	901187	Applied En	01187	5,26	A	

Map Journals



Map Journal Ranking

4544 rows

Extensions: unc

Show as: **rows** records Show: 5 **10** 25 50 rows « first ‹ previous

All		CODI_REVISTA	CODI_ISI	CODI_AREA	DESC_AREA	ANY_ISI	POSICIO	NUM. REVISTES	QUARTIL	ComputedQu
	1.	900035	00035	265	AGRONOMY	2009	3	61	Q1	Q1
	2.	900035	00035	071	FORESTRY	2010	1	53	Q1	Q1
	3.	900035	00035	112	METEOROLOGY & ATMOSPHERIC SCIENCES	2010	8	68	Q1	Q1

RDF Schema Alignment

The RDF schema alignment skeleton below specifies how the RDF data that will get generated from your grid-shaped data. The cells in each record of your data will get placed into nodes within the skeleton. Configure the skeleton by specifying which column to substitute into which node.

Base URI: http://indagus.udl.cat/linkedudl/ edit

RDF Skeleton | RDF Preview

Available Prefixes: rdfs rank foaf dct bibo owl xsd rdf vivo add prefix manage prefixes

CODI_REVISTA URI
bibo:Journal
add rdf:type

→ rank:journalRankInCategory →

CODI_REVISTA URI
rank:JournalRanking
add rdf:type

→ dct:date → **ANY_ISI** cell

→ vivo:rank → **POSICIO** cell

→ rank:total → **NUM. REVISTES** cell

→ rank:quartile → **QUARTIL** cell

→ dct:subject → **CODI_AREA** URI
rank:Category
add rdf:type

→ rdfs:label → **NUM. REVISTES** cell

add property

→ dct:identifier → **CODI_ISI** cell

Results

- **Publish RDF** data for users, tools, web sites,…
- Align with transparency initiatives, **open data**
  - Publish as **Linked Open Data**
  - Also available from **SPARQL** Endpoint
    - Facilitate integration with other tools like Drupal
- Also provide **user interface** for **interactive** data **exploration** and **analysis**

SPARQL Consumption







Universitat de Lleida
Departament d'Informàtica
i Enginyeria Industrial

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Home » Teaching »Information Professor

Information Professor

Name: **Virgil Goma, Jordi**
Category: **part-time associate T1**
Area of Knowledge: **LSI**
Office:
Phone: +34,973
Web page:

SUBJECTS	CURRICULUM
WEB SYSTEMS AND TECHNOLOGY	Degree in Computer Engineering

RECENT PUBLICATIONS	YEAR
Emotions Ontology for Collaborative Learning and Modelling of Emotional Responses	2015

More articles from this person



Publishing with Rhizomer

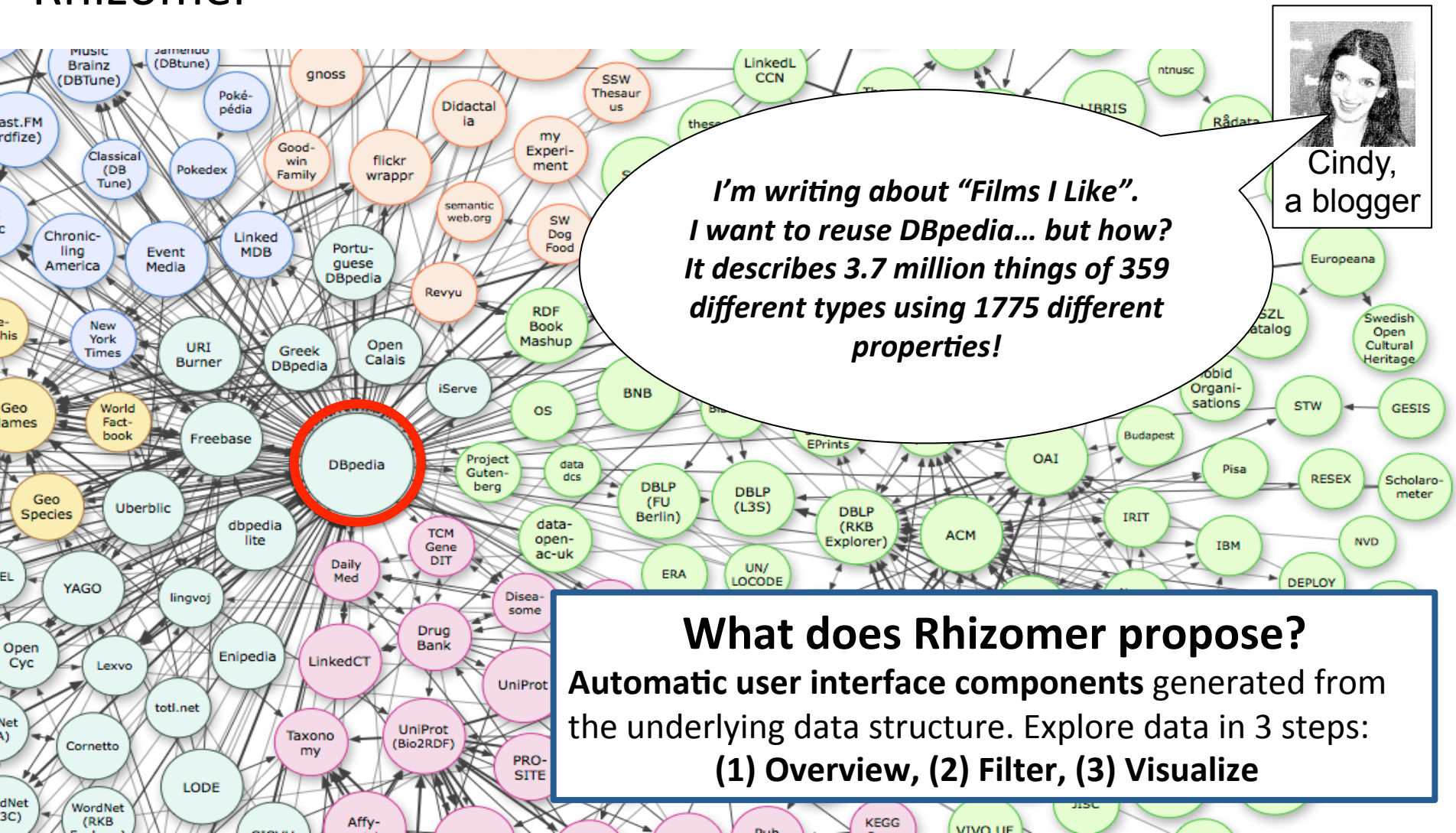
Rhizomer

- Deployed on top of SPARQL endpoint
- Publish as Linked Data for machine and human consumption
  - Automatic user interface generation from data “shape” and ontologies

- Winner Intelligent Data Exploration (IESD) Challenge 2013
  - IESD year collocated with International Semantic Web Conference (ISWC’15), Bethlehem, Pennsylvania

Tool Overview

Rhizomer



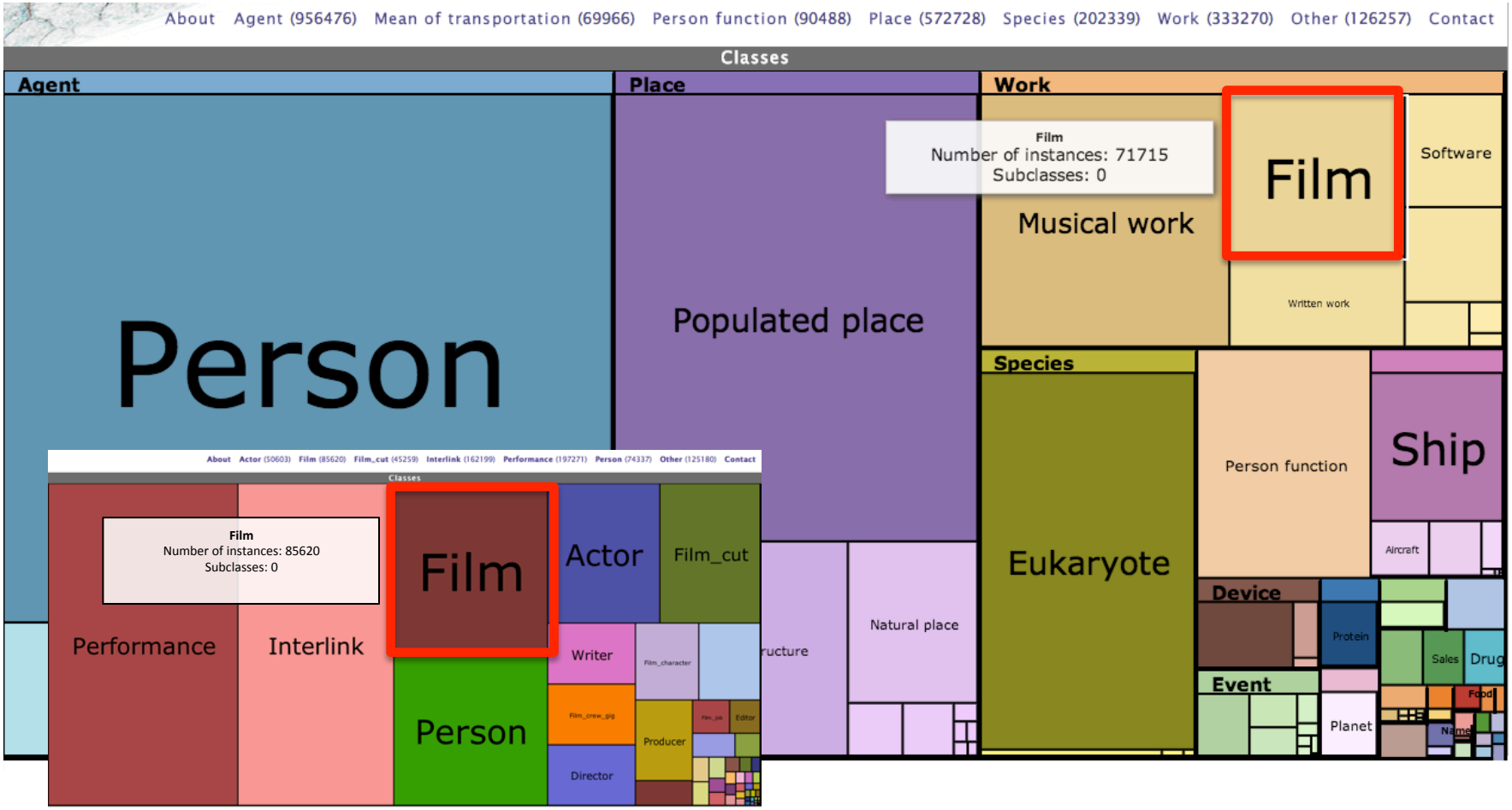


Rhizomer

★ Overview What is a dataset about?

Navigation menus, Treemap, site map…

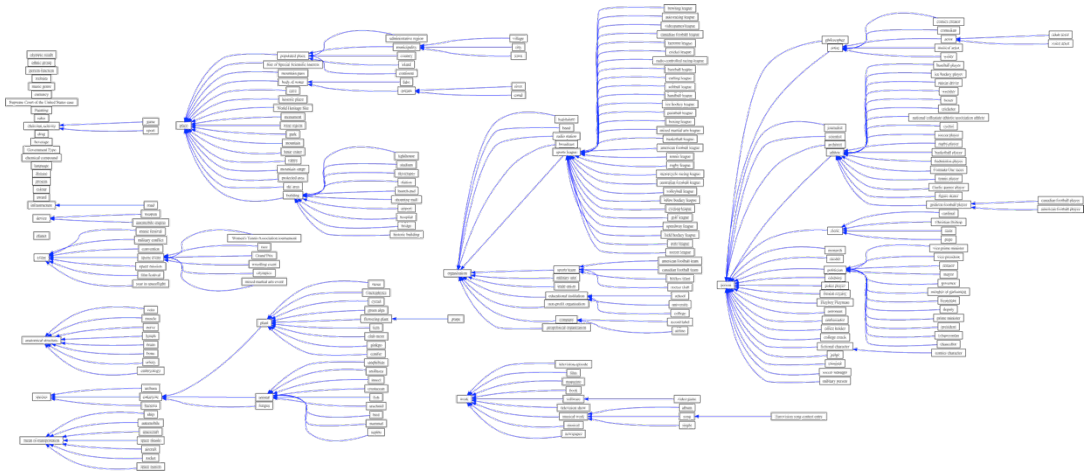






Rhizomer

Automatic Generation



About **mean of transportation (32712)** **organisation (134972)** **person (317015)**

aircraft (6187)	band (21862)	artist (78829)	body of wate
automobile (6517)	broadcast (6775)	athlete (114848)	building (327
rocket (206)	company (31251)	cleric (5423)	historic place
ship (19698)	educational institution (31297)	fictional character (8635)	lunar crater (
space shuttle (20)	military unit (9393)	military person (13494)	mountain ran
space station (22)	non-profit organisation (1443)	office holder (16526)	mountain (84
spacecraft (62)	radio station (15703)	politician (19285)	populated pla
	sports team (11705)	scientist (8475)	protected are
	trade union (1209)	soccer manager (8490)	World Heritag
	Other organisation (1400)	Other person (16874)	Other place (

5) **place (413404)** **species (141660)** **work (320048)** **Other (113563)** **Contact**

vater (26717)	archaea (164)	album (94033)	anatomical structure (3851)
(32780)	bacteria (163)	book (20490)	chemical compound (6273)
lace (23297)	bird (12334)	film (49184)	device (19626)
ter (1449)	fish (11134)	magazine (2182)	disease (4647)
range (1473)	fungus (6960)	musical (1010)	drug (4348)
(8479)	insect (36245)	newspaper (3337)	event (12244)
d place (310970)	mammal (8274)	software (22633)	person function (22377)
area (4521)	mollusca (8677)	television episode (74397)	planet (12348)
ritage Site (1118)	plant (39528)	television show (15779)	road (8914)
ce (2144)	Other Animal (15930)	Other MusicalWork (37003)	Other Other (18935)



Rhizomer

★ Filter

View properties and values. Filter them.
Pivot among entities through relations

Facets, pivoting, breadcrumbs…



DBPedia films have actors that have birthplaces, LinkedMDB doesn't…

With DBPedia I can filter films directed by Herzog starring actors born in places in Germany!

Pivoting

Context

Filter Agent by: Reset filters

- **Birthdate** — Search values… — Common values
- **Birthdate** — Search values… — Common values
- **Birthplace** — Search Place values… — Common values — Filter Place
- **Birthplace** — Search Place values… — Common values — Filter Place
- **Caps** — Search Agent values… — Common values — Filter Agent
- **Clubs** — Search Agent values… — Common values — Filter Agent

Data | Charts | Map

Reset all filters[x]

Showing **Agent**
has Film where **Director** is Werner Herzog [x]
has birthPlace Place where **Country** is Germany [x]

TimeLine (3)

edit – new – del
\+ **Udo Kier** *a* **Person, agent, person, Person, Thing**
comment Udo Kier (born Udo Kierspe; 14 October 1944) is a German actor, known primarily for his work in horror and exploitation movies.
Referrers – TimeLine

edit – new – del
\+ **Volker Prechtel** *a* **Person, agent, Thing, person, Person**
comment Volker Prechtel (9 August 1941 – 7 August 1997) was a German actor. He appeared in 52 films and television shows between 1974 and 1997.
Referrers – TimeLine

edit – new – del
\+ **Werner Herzog** *a* **Person, agent, person, Thing, Person**
comment Werner Herzog Stipetić (born 5 September 1942), known as Werner Herzog, is a German film director, producer, screenwriter, actor, and opera director. He is often considered one of the greatest figures of the New German Cinema, along with Rainer Werner Fassbinder, Margarethe von Trotta, Volker Schlöndorff, Werner Schröter, and Wim Wenders.
Referrers – TimeLine

More…



Rhizomer

★ Visualise

Visualisations declaratively associated to data

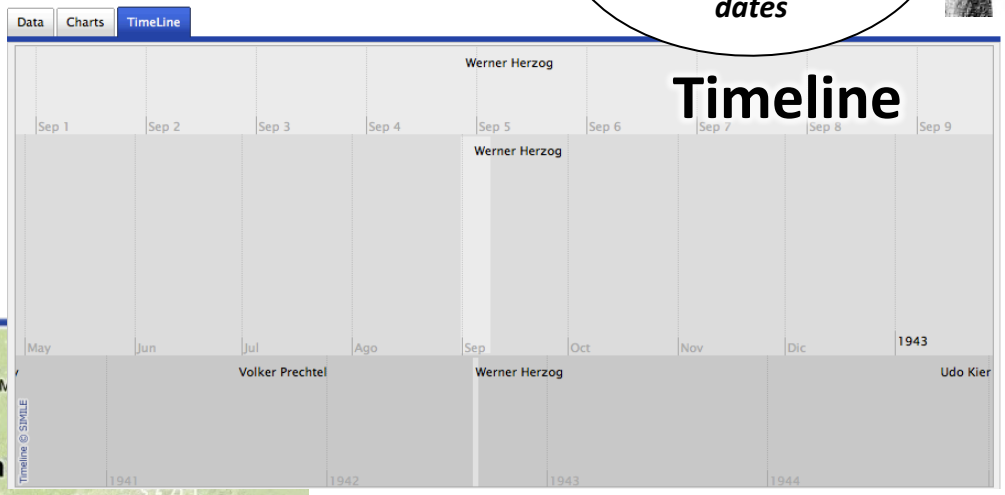
Services and Plugins



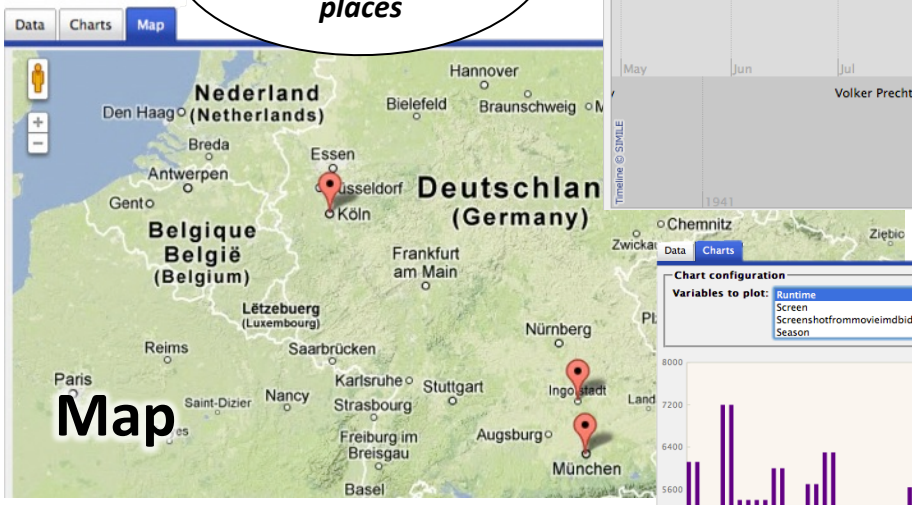
Timelines to show anything with a date, like actors' birth dates



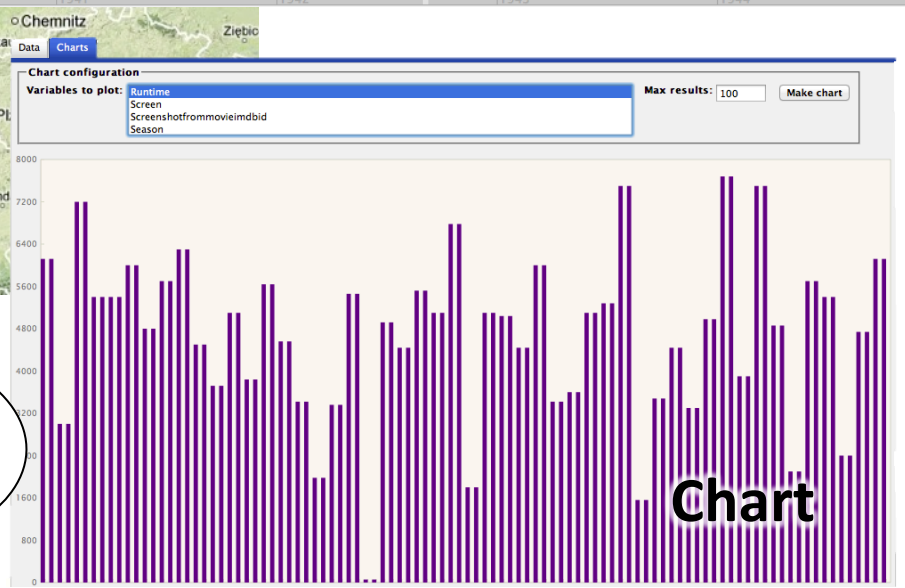
Maps for things geolocated, like actors' birth places



Timeline



Map

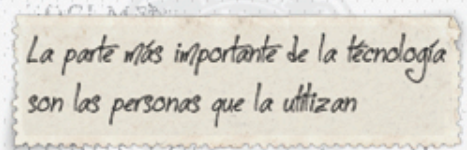


Chart



And charts for numbers, like Herzog films runtimes…

(cc) BY



Demo

http://indagus.udl.cat/linkedudl



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Infrastructures for Sustainable Open Government Data with Geospatial Features
Spanish Government TIN2012-37826-C02

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La parte más importante de la tecnología son las personas que la utilizan

Thank you for your attention

Roberto García, Jordi Virgili-Gomá and Rosa Gil
Universitat de Lleida, Spain

Contact:
roberto.garcia@udl.cat
http://rhizomik.net/~roberto/
@rogargon

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