

Understanding Research with Semantic Technologies

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Some challenges addressed by semantic technologies

Understanding the space of research fields

What are the main components of a field? How are they linked?

Learning the history and trends of research communities

Where are they coming from? Where are they going?

Describing and assessing research actors and products

Who are the researchers, communities, and organizations that will be impacted by a research policy?

What are the relevant scientific venues and pieces of literature?

Detecting trends

What are the promising research areas that should be nurtured?

Anticipating trends

What research topics will emerge in the following years?

Fostering knowledge transfer

How to accelerate the knowledge flow and the pace of technology propagation?



Understanding the space of research fields

SMART TOPIC MINER

Order

Publications

- Use tree-list
- Show explanation
- Show input keyword distribution
- Advanced analytics

File input

Choose Files No file chosen

Accepting only .zip, .xml and .csv

Additional keywords

Add here your additional keywords separated by comma.

Topic Granularity: 3

[+] Example Springer Nature Proceedings
(CCIS_528) HCI International 2015

[+] Expert settings

SIGNIFICANT TOPICS:

Reload Tree Download Tree Go down

Human-Computer Interaction (HCI)

computer science

Book

[iv. 2] signal processing

[iv. 3] telecommunication networks

[iv. 4] data communication systems

gesture recognition

facial expressions

usability engineering

cognitive systems

man machine systems

display devices

learning systems

interactive computer graphics

internet

world wide web

speech recognition

speech analysis

speech processing

mobile computing

mobile devices

Select all

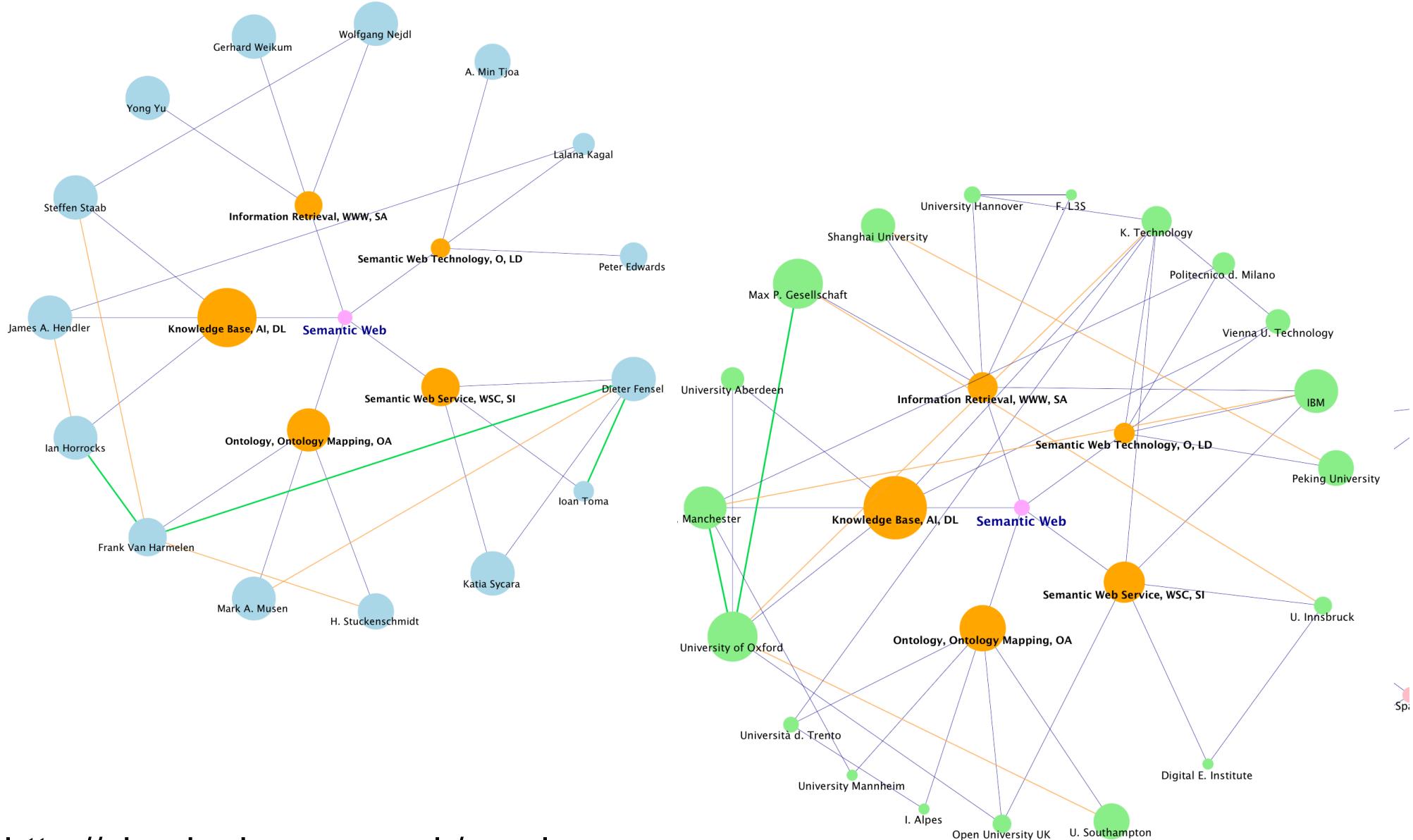
Human-Computer Interaction (HCI) (51 pubs)

user interfaces (42 pubs)

I18008 : information systems and communication service (57 pubs)

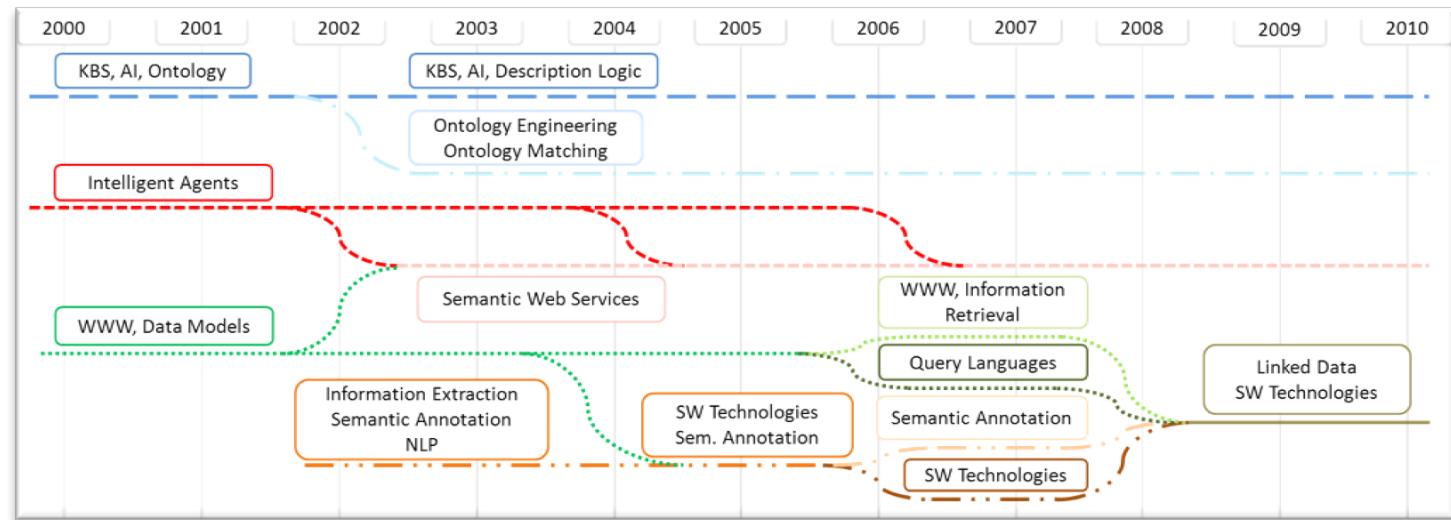
I18008 > I18067 : user interfaces and human computer interaction (51 pubs)

Learning the history and trends of research communities

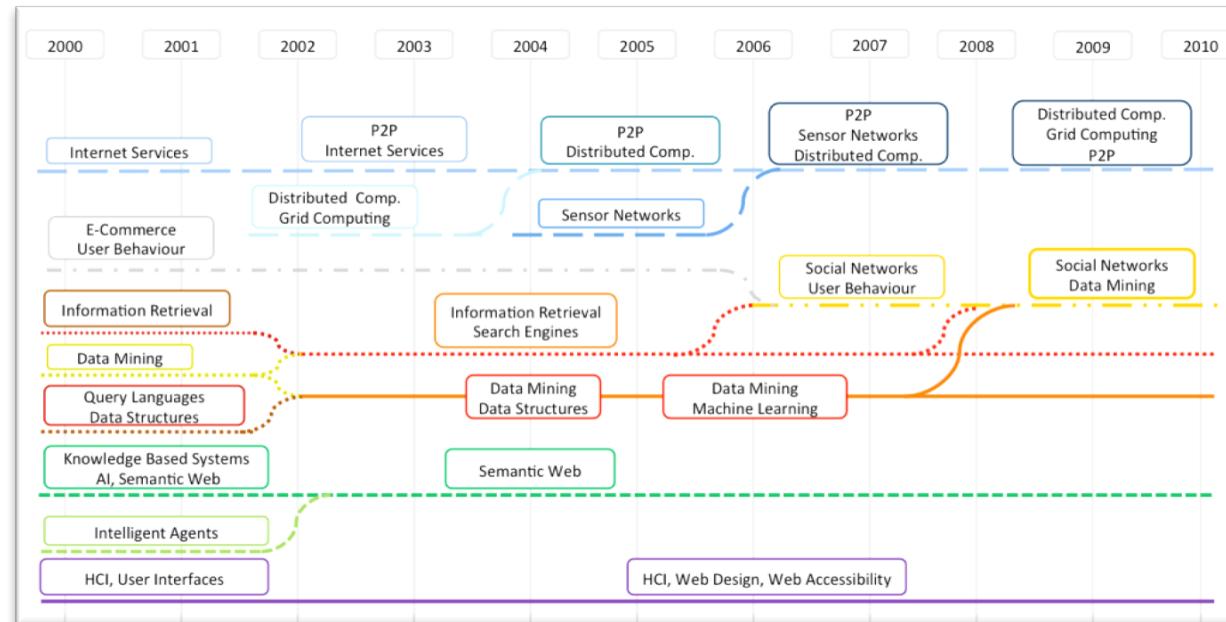


Learning the history and trends of research communities

Semantic Web



WWW



Describing and assessing research actors and products

Bio Topics Co-authors C.A. Graph View

Topic analysis:

Plot publications:
Publications vs Citations - Topic vs Co-author

Topics by Publications:

Plot topic publications:
Line - Histogram - Percentual - Normalized by topics

Uncheck all

Semantic Web (118 pub.) -

Semantic Web Technology (12 pub.) -

Web Ontology Language (10 pub.) -

Semantic Web Service (7 pub.) -

Semantic Annotation (6 pub.) -

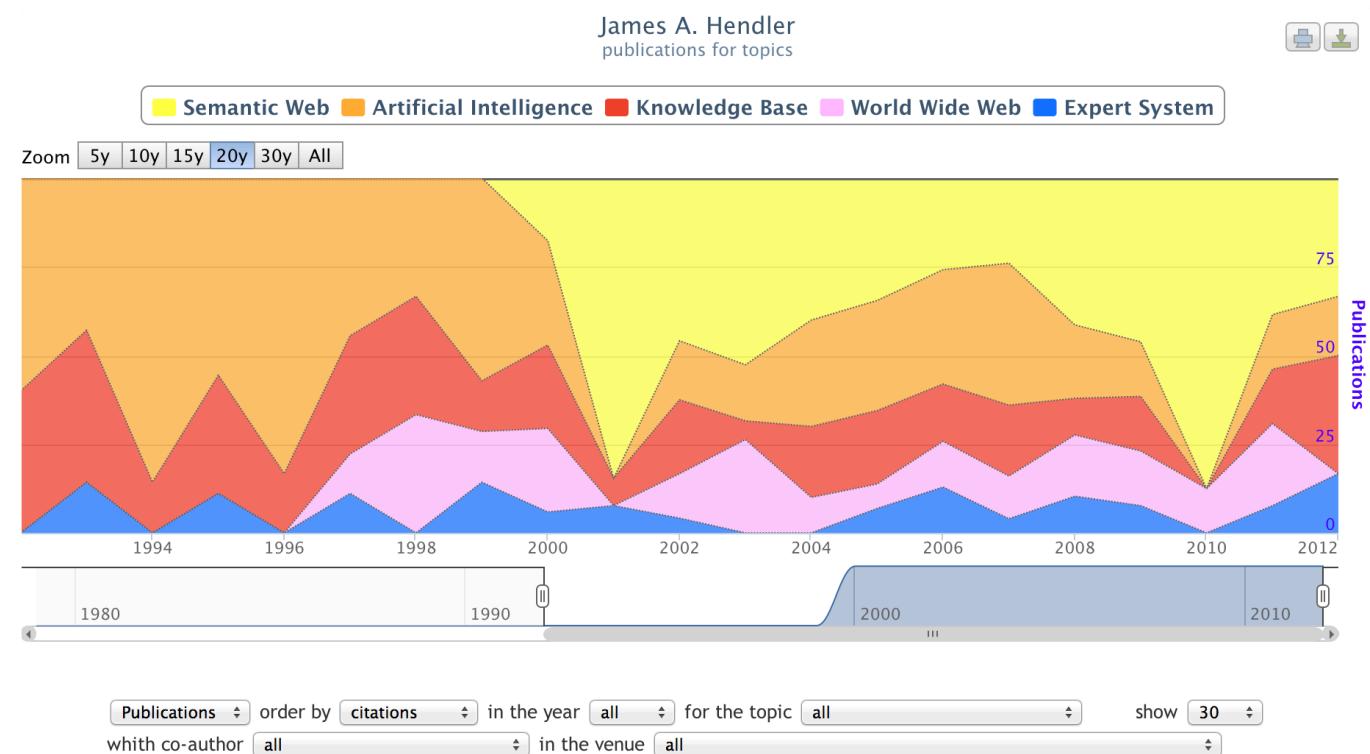
Semantic Interoperability (5 pub.) -

Semantic Description (5 pub.) -

Artificial Intelligence (114 pub.) -

Knowledge Representation (45 pub.) -

Description Logic (20 pub.) -

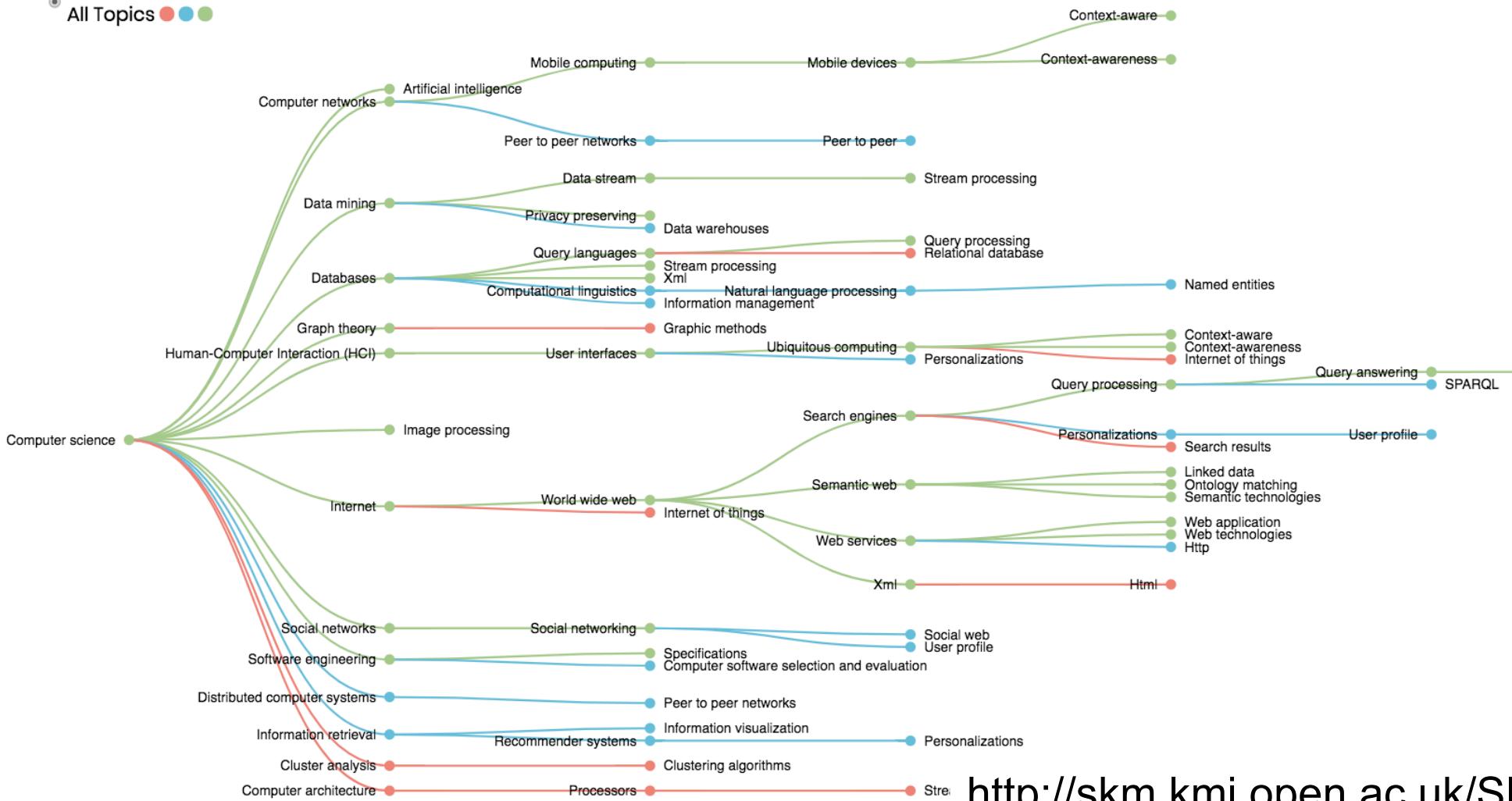


All papers by James A. Hendler ordered by *citations*.

1. The Semantic Web (2001)
Tim Berners-Lee, James Hendler, Ora Lassila
Topics: Semantic Web
Cit: 15696

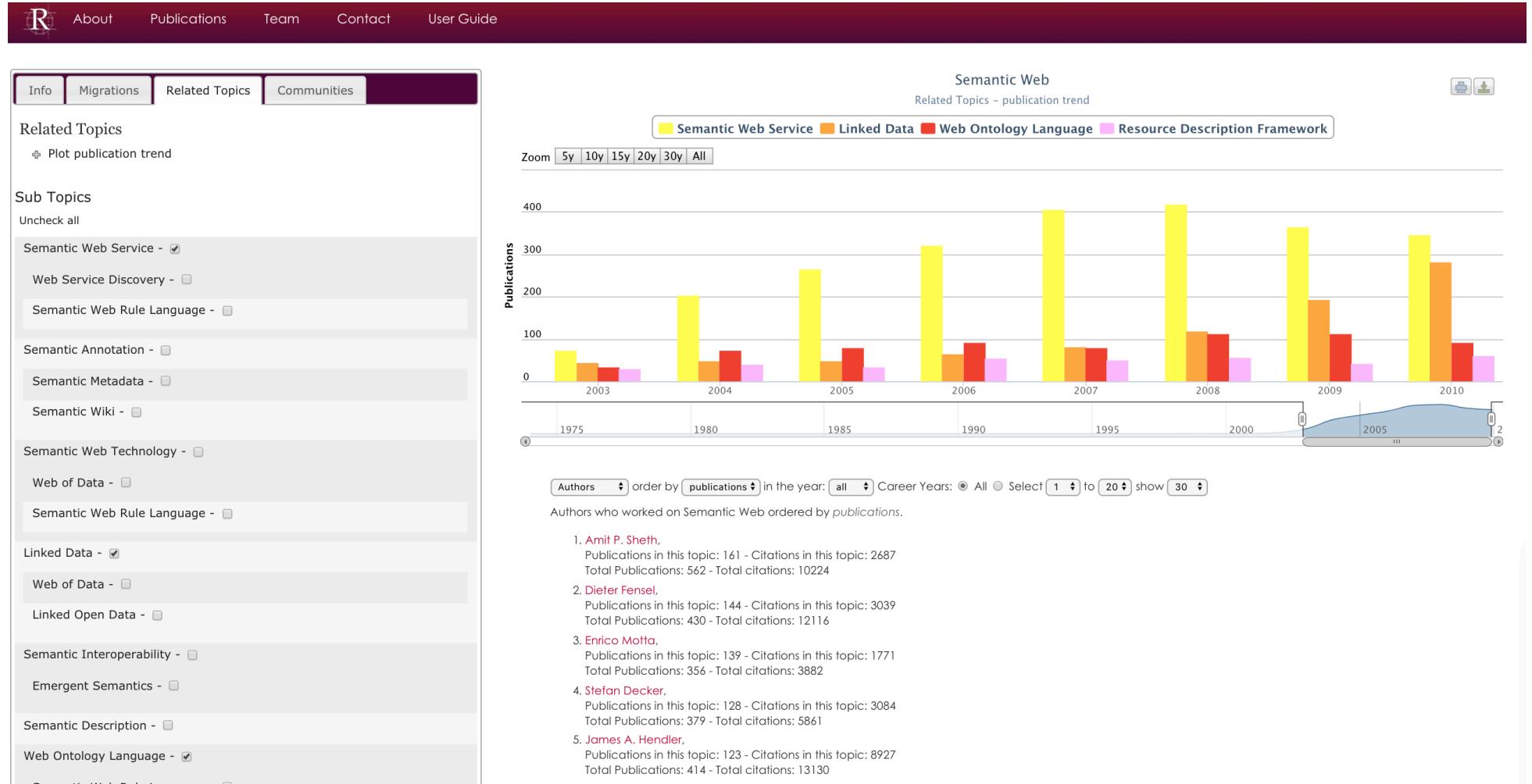
Describing and assessing research actors and products

- Topics in International Semantic Web Conference (2012-2016) ●
- Topics in Extended Semantic Web Conference (2013-2017) ●
- Topics in both publications ●
- All Topics ● ● ●





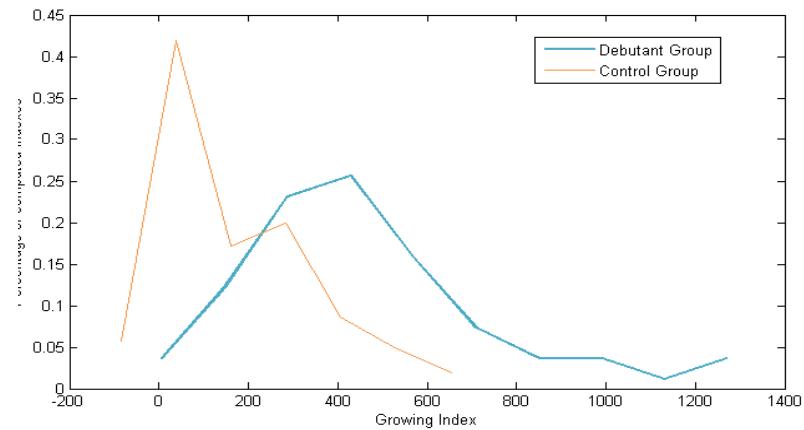
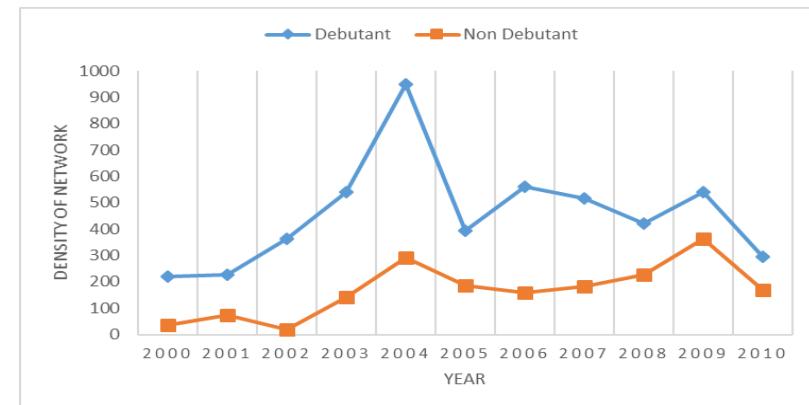
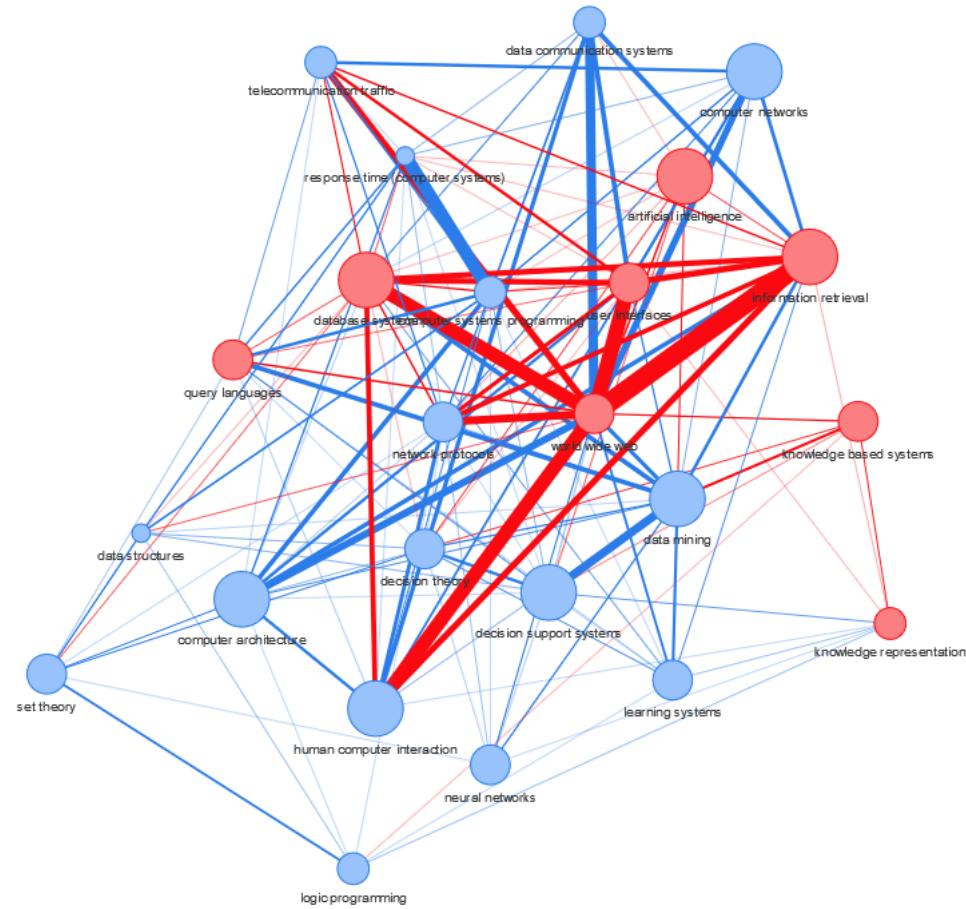
Detecting trends





Anticipating trends

Augur is a method for detecting the emergence of research areas at an **embryonic stage**, i.e., before the topic has been consistently labelled by researchers and associated with several publications.

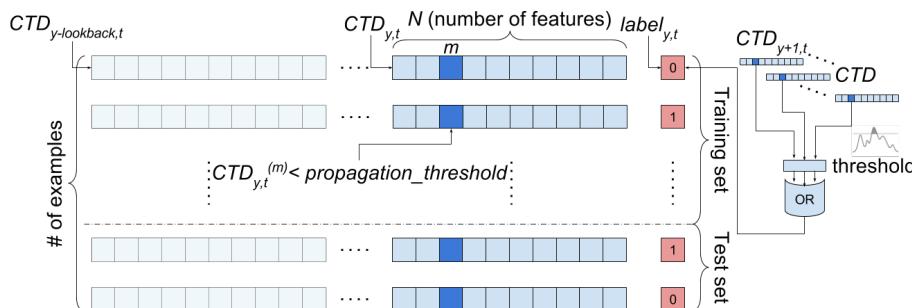
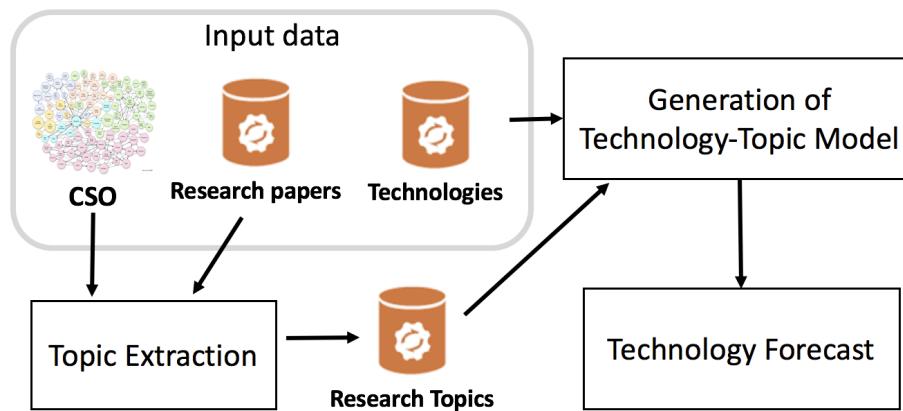




Fostering knowledge transfer

Technology-Topic Framework is an approach for predicting technologies that should be of interest for a research field and suggesting them to relevant scholars.

Architecture



Technologies

TTF predictions

Latent Dirichlet Allocation
(2003)

object recognition, software engineering, comp. networks, security of data, ontology, semantic web, robotics, imaging systems, data reduction, image compression ...

Web Ontology Language (2004)

multimedia systems, image processing, computer vision, robotics, security systems, computer aided design, genetic, telecommunication services, e-learning ...

Extreme Learning Machine (2008)

infor. retrieval, wireless telecommunication systems, signal processing, data mining, computer vision, robotics, image reconstruction, speech recognition ...