

# A Framework for RDF User Profile Management

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# Main Issues in Semantic Web & User Profiles

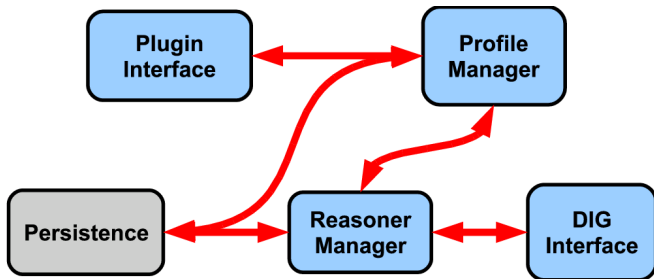
## Semantic Web

- Extension of traditional Web (Berners-Lee et al. 1999)
- Semantic Web = Knowledge Representation for the WWW

## Are SW Languages Useful for User Profiles?

- Well Defined Semantics
- Independent Reasoning Services
- Information Reuse  
(or: Do not reinvent or profile the wheel...)
- ... maybe not enough reasons ...

# Sketchy Framework

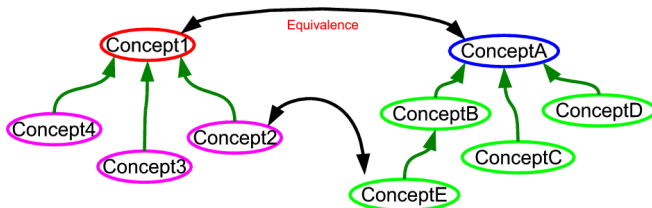


- Interchange Format: RDF
- Semantics: RDFS or OWL Ontologies
- Reasoning provided by external DIG reasoners
- BUT...

# Internal Knowledge Representation

## How To Leverage the SW Representation?

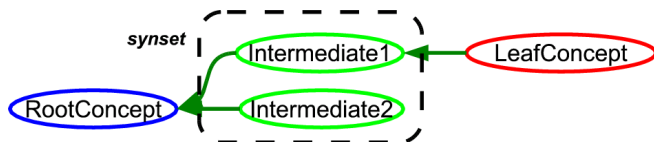
- Information Reuse with Ontology Alignment & Merging



## How To Enhance User Profiling?

- Traditional Algorithms can improve
  - Bags of Concepts instead of Bags of Keywords (Semeraro et al, PIA 2005)
- Traditional Algorithms can evolve
  - Use of Ontological Information to recalculate heuristics

# An Evolution to Traditional TF-IDF



Suppose:

Concept	doc frequency	collection frequency	TF-IDF
<i>LeafConcept</i>	low	low	high
<i>Intermediate2</i>	high	high	low
<i>RootConcept</i>	high	low	very high

BUT

- Each occurrence of *Intermediate2* and *LeafConcept* is an occurrence of *RootConcept*
- The *RootConcept* TF-IDF score becomes lower
- Use Generalization with Caution: Information Loss

# Future Work

## Architecture Level:

- Integration of Ontology Alignment components in the framework

## Personalization Components Level:

- Empirical Evaluation of TF-IDF with Hierarchical Informations

# Thanks!

## Contacts:

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