Ontological Representation of Social Networks

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Ontological representation of social individuals

- FOAF Ontology – use OWL format
- Surpasses graph description languages
- Basic ontology extendable with domain specific knowledge
- FOAF profiles on Web auto-generated by community sites
- FOAF an experimentation of Semantic Web technology
- FOAF vocabulary describes personal attribute info of homepages
- FOAF profiles use same vocabulary for individual and friends
- FOAF profiles linked together to form networks of web profiles

Contd…

- Popular social network sites use centralized database

Disadvantage of Centralized DB:

- Depends on control of DB owner – to protect technical/legal
- cannot export data in machine processable formats
- Don’t allow user to control as he wish
- Finds info used in way not intended

- Above problem addressed using Semantic Web technology

Contd…

- FOAF profiles created, controlled by individual user shared in distributed
- Mechanism to link individual profiles- *rdfs:seeAlso mechanism*
- Related profiles discovered by crawling FOAF network - scutters (RDF Crawlers)
- But contain links to members of the same website
- FOAF distributed - has to address the issues of identification and aggregation

Contd…

- Create blank node provide unique identification – existential quantifier
- OWL describe identifying properties of *foaf :Person class as inverse-functional properties (IFP)*
- IFP - resources have same value for inverse-functional property must denote same object. Ex. email address
- Name is not IFP as more than one person have same name
- FOAF ontology's vocabulary and semantics kept stable – ambiguous terms removed

Contd…

- Vocabulary extended rather added – RDF creates subclasses, sub-properties, add new properties
- Example : FOAF adopted in SIOC, DOAP
- *foaf :knows relationship* – defined in broader scope intentionally
- FOAF expects to do extensibility for precise notion of relationship
- *example:supervises* between a *example:Teacher and a example:Student,*
- *where supervises is a subPropertyOf* “knows” and Teacher and Student are subclasses of *foaf :Person*

Digest

- ontological characterization of social relationships is needed for the aggregation
- Information comes from multiple sources and different contexts
- Representation of relationship - captured from observation about environment as patterns