 Ontology-Based Inference Methods in Handling Privacy Policies

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Ontological Model Overview:

Current approaches:
- goal-oriented languages
- XML-based languages

Potential problems:
- lack of inference capabilities
- reliance on deductive methods

Alternative approach:
- integration of domain-specific resources with legacy resources (ontologies)
- inference methods based on resource structure and organization (TMR matching)

Advantages:
- handles cases of abductive reasoning
- not limited to subsumption relations
- allows dynamic inference process

Further research:
- evaluation criteria for query satisfaction

Example:
We may share your personal information with members of our corporate family to provide joint services.

Query: does 'company X' have access to PI?

TMR

SHARE-EVENT-1
AGENT CORPORATION-1
THEME PI
BENEFICIARY CORPORATION-2
PURPOSE SERVICE-EVENT-1
TIME \(< (F-A-T) \)>
CORPORATION-1
HAS-NAME EBAY
AGENT-OF SHARE-EVENT-1
BENEFICIARY-OF SHARE-EVENT-1
NUMBE PLURAL
SERVICE-EVENT-1
AGENT CORPORATION-1
BENEFICIARY HUMAN-1

TMRQ

ACCESS-EVENT
AGENT CORPORATION-1
THEME PI
BENEFICIARY HUMAN-1
HAS-OWNER HUMAN-1
THEME-OF ACCESS-EVENT
OWNER-OF PI
BENEFICIARY-OF SERVICE-EVENT-1
SERVICE-EVENT-1
AGENT CORPORATION-2
HAS-NAME EBAY
AGENT-OF SERVICE-EVENT-1
HAS-NAME COMPANY-X
AGENT-OF ACCESS-EVENT
REQUEST-INFORMATION THEME access-event.agent