ConTag - A Tagging System linking the Semantic Desktop with Web 2.0

Introduction

ConTag

Progress

Ontology

Document

Term Soup
Learning Ontologies

Introduction

City

New York

Mbale

Semantic correct Correspondents?

ConTag

Progress

ConTag – Benjamin Horak
Use Cases 1/3 (existing instance)

- Attach the document to existing instance as occurrence.

```
    City

    New York
```

- Location
  - Country
    - City
      - New York
      - Boston
    - Building
    - Room
Use Cases 2/3 (new instances)

- Create a new instance of a known class and attach the document as occurrence.
Use Case 3/3 (new [sub]classes)

- Create new subclass of known class with new instances and attach document as occurrence.
Sample Output of Use Cases

1. I think (40%) that New York appears in http://www.example.com

2. I suppose (20%) that Mbale is a city.

3. I suppose (20%) that Person is a new class.

Links should open an explanation interface!
The Tagging Phases

Introduction

ConTag

Progress

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The Tagging Phases

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Document

Information Cloud/Graph

Concept Tree

Ontology

Person

Location

City

Thing

Dictionaries & Web Services

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The Tagging Phases

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Tag Similarity 2D

- Introduction
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Tag Similarity 2D

Tag1 ~ Tag2 = Point(x, y)

- Village behaves like
- Identity sounds like
- Cities
Concept Similarity

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London, Capital city of England

City

London

England Capital

City

London

Town, Village, City Capital, Inhabitants, (Context from London)

Heathrow, England Buckingham Palast, Tower, Capital, Tower Bridge, London

London
Concept Similarity

London, Capital city of England

City

4 matches

City

3 matches

London

England Capital

Town, Village, City Capital, Inhabitants, (Context from London)

Heathrow, England Buckingham Palast, Tower, Capital, Tower Bridge, London

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Decimal numbers define metrics of context disjunction

```
Concept Tree

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Sibling Disjunction
Inheritance Disjunction

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```
London ~ Thing = (0; 0.8)
London ~ Location = (0; 0.8)
London ~ Person = (0; 0)
London ~ City = (0; 0.8)
London ~ Country = (0; 0.2)
London ~ London = (1; 0.4)
London ~ England = (0, 0.2)
(sound, behavior)
Two Questions remain
• Friend to Person's context?
• Friend as Subclass of person?

friend ~ person = (0; 0.2)
friend ~ location = (0; 0)
peter parker ~ person = (0; 0.2)
peter parker ~ friend = (0; 0.2)
## Usable Web 2.0 Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>TagTheNet</td>
<td>Phrases and semantic classification</td>
</tr>
<tr>
<td>Dict.org</td>
<td>Definitions, Relations</td>
</tr>
<tr>
<td>WordNet</td>
<td>Definitions, Synonyms</td>
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<tr>
<td>Wikipedia</td>
<td>Definitions, Relations</td>
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<td>Google Glossary</td>
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<td>Delicious</td>
<td>Relations, Collaborative Tag Repository</td>
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<tr>
<td>DefTag</td>
<td>Hypernym extraction</td>
</tr>
<tr>
<td>Others (Flickr, Yahoo, Technorati, etc)</td>
<td></td>
</tr>
</tbody>
</table>
The ConTag Interface

- Tagging API
  - Semantic Tag Comparison
  - Hypernyms
  - Definitions
  - Semantic related tags
  - Ontology proposals (3 Use Cases)

- Document API
  - Keywords
  - Ontology proposals (3 Use Cases)
I think that: CITY: [san francisco(I)] appears ...: 0.2
I think that: LOCATION: [location(C), san francisco(I)] ...: 0.4
I think that: THING: [location(C), person(C), san francisco(I), topic(C)]...: 0.8
I think that: SAN FRANCISCO: [san francisco(I)] ...: 0.2
I think that: PERSON: [person(C)] ...: 0.2
I think that: TOPIC: [topic(C)] ...: 0.2

I propose that: australia(I) is instance of LOCATION with a propability of: 0.2
I propose that: india(I) is instance of LOCATION with a propability of: 0.2
I propose that: united states(I) is instance of LOCATION with a propability of: 0.2
I propose that: australia(I) is instance of SAN FRANCISCO with a propability of: 0.2
I propose that: india(I) is instance of SAN FRANCISCO with a propability of: 0.2
I propose that: united states(I) is instance of SAN FRANCISCO with a propability of: 0.2
I propose that: arun gupta(I) is instance of PERSON with a propability of: 0.2
I propose that: beta(I) is instance of PERSON with a propability of: 0.2
I propose that: bill shannon(I) is instance of PERSON with a propability of: 0.2
I propose that: danielle pham(I) is instance of PERSON with a propability of: 0.2
I propose that: dennis gu(I) is instance of PERSON with a propability of: 0.2
I propose that: mike lei(I) is instance of PERSON with a propability of: 0.2
I propose that: engineer(I) is instance of TOPIC with a propability of: 0.2
I propose that: java(I) is instance of TOPIC with a propability of: 0.2
I propose that: javaone(I) is instance of TOPIC with a propability of: 0.2
I propose that: platform(I) is instance of TOPIC with a propability of: 0.2
I propose that: sun(I) is instance of TOPIC with a propability of: 0.2