Context-Rich Social Uses of Knowledge Graphs

Mayank Kejriwal
USC Information Sciences Institute
Knowledge Graphs

• We all know what they are…
  – …or do we?
• NLP definition
• Semantic Web definition
• Others? E.g., Schema.org
Another Major Initiative: AI for Social Good

Artificial Intelligence For Social Good

June 7, 2016

Artificial Intelligence Ethics, and Society

AAA/ACM Conference on

Artificial Intelligence, Ethics, and Society

New Orleans, USA
February 1-3, 2018

REGISTRATION CLOSED

AAAI / ACM conference on

ARTIFICIAL INTELLIGENCE, ETHICS, AND SOCIETY

The AI Now Institute at New York University is an interdisciplinary research center dedicated to understanding the social implications of artificial intelligence. Our work focuses on four core domains:

- The implications of artificial intelligence on privacy and civil liberties
- The role of artificial intelligence in perpetuating or mitigating existing inequalities
- The responsibilities of those who develop and deploy artificial intelligence technologies
- The impact of artificial intelligence on the workforce and the economy

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Knowledge Graphs + AI for Social Good

• Why would it work?
• Case study: human trafficking

Knowledge Graphs provide the abstraction and flexibility...AI for Social Good provides the application

Demo of Domain-specific Insight Graphs (DIG)
Contexts in Context

• Knowledge inside a domain mind cannot be publicly observed; hence, structure can only be hypothesized about

• Similar to the predicament faced in cognitive science
  – What ‘algorithms’ are executing in the mind?
  – Led to developments in behavioral psychology

Are ontologists/Semantic Web facing a similar crisis?
Why isn’t this working? (Or is it…)

Lots of arguments about what should go into an ontology

Unwieldy ontology

How do we use it, build applications on it, extend it, maintain it…?
How did we define a ‘domain’?

1. Questions
2. Entity types (a shallow ontology)
   - Ad, Posting Date, Title, Content, Phone, Email, Review ID, Social Media ID, Price, Location, Service, Hair Color, Eye Color, Ethnicity, Weight, Height
3. Examples (of what?)
“Anything that people use becomes useful over time, and people use only what’s useful.”

- Who are our users?
- What’s the usage context?
- What’s the input data?
- What’s the desired output?
- How much noise is ‘tolerable’?
- Can we work with the noise rather than wait for that ever-coming ‘tolerable’ F-Measure threshold?
Contexts in Context

- User
- Domain
- Data Quality/Coverage