Privacy Protection using Semantic Web Technologies

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What is Big Data?

Source: http://www.cagle.com/2010/05/internet-privacy/
What’s New?

• Technologies

• **Big Data characteristics**
  – Volume
  – Variety
  – Velocity – live database, fast growth
Past: The Inference Problem

Access Control

Confidential

Public

Organizational Data

Web Data

Ontology

Data Integration and Inferences
Present: Big Data Inferences

Private ?

Web Data

Secure ?

Ontology

Data Integration and Inferences
Future: Research Challenges

• **Security for raw data**
  – Flexible access control
  – Data removal

• **Security for metadata**
  – Protection need of novel, new concept
  – Metadata guided attacks

• **Cross-context attacks**
  – Correlate data across multiple contexts
Need for Visualization

Context 1

Context 2

Context 3
Questions?