Promising (or so I think) Areas for Ph.D. Research

Prof. Dimitris Plexousakis
Professor of Computer Science, Univ. of Crete
Head of Information Systems Lab, FORTH-ICS
dp@ics.forth.gr
http://www.ics.forth.gr/isl

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To Ph.D. or not to Ph.D.?
Dilbert enters the Big Data era

http://dilbert.com/strips/comic/2012-07-29/
Big Data Everywhere

Several topics related to the analysis and management of big data

- Large-scale information integration
- Coping with heterogeneity (structural, syntactic, semantic)
- Special types of data pose special challenges (e.g. streams, geo-spatial)
- Value extraction via analytics (domain-specific)
- Data summarization
- Visual analytics

Beware: one solution doesn’t fit all!
Linked Data on the Web

Linked Data Cloud grows rapidly in volume and variety of data

- Entity resolution
- Access control
- Integration and summarization
- Consistency enforcement
- Data provenance (tracking, trustworthiness, accountability)
- Exploratory search (disambiguation, ranking, visualization)
- Reasoning on the LOD cloud
Cognitive and Social Robotics

New contexts for robotics research
- High-level robot control
- Action theories for dynamic domains
- Connecting perception, knowledge and action
- Increased cognitive capacities (e.g., learning from experience)
- Human-robot interaction
- Multi-objective planning
- Collaborative goal attainment
- Non-monotonic and commonsense reasoning
- Ambient environments
Many more areas ...

- **Service-oriented and Cloud Computing**
  - Automated, QoS-aware, provably correct service composition
  - New service provisioning models (Data as a Service, Business Process as a Service, Reasoning as a Service)

- **Internet of Things**
  - Security
  - Interoperability
  - Declarative behaviour specification

- **Deep Learning**

- **Argumentation Systems**
  - Leveraging the textual content of the Web