

Ontology, Rules, and Logic Programming for Reasoning and Applications

(RulesReasoningLP)

**Ontolog Mini-Series Launch Event:
Survey and Introduction
October 24, 2013**

**Benjamin Grosf (Coherent Knowledge Systems,
Benjamin Grosf & Associates)
Leo Obrst (MITRE)**

Topics: Ontology, Rules, Reasoning, Logic Programming, and Applications

- Ontology-Rule Knowledge Representation containing Classical Logic, Declarative Logic Programs (Pure Prolog), and Rulelog
 - Standards incl.: Rule Interchange Format, RuleML, and Common Logic
- Ontology and Rule Reasoning Tools, Systems: Requirements, Design, Implementation
 - Examples include Semantic Web and Description Logic-based systems, First-Order Logic systems, Logic Programming systems, Rulelog systems, and Hybrid Description Logic + Logic Programming (Description Logic Programming) systems
 - E.g., Cyc, Pellet, Jena, Prover9, Vampire, SILK, Coherent, RuleLog; various Prologs such as SWI-Prolog, XSB Prolog, Ciao Prolog, Prova, Flora-2
 - Answer Set Programming, Constraint Logic Programming, Deductive Databases, SAT and SMT reasoners, decision-support systems, business rule systems, etc.
[Deductive, Inductive, Abductive, Probabilistic, etc., reasoning]
- Ontology and Rule Reasoning Optimization: Knowledge Compilation from Development Time Ontologies and Rules to Run-Time Reasoning, Tabling, Memo-izing, Extensionalizing, Delayed / Lazy Evaluation, Type Subsumption Encodings, etc.
- Ontology and Rule Reasoning Applications

Goals

- 1) Sketch out the current field of ontology and rule reasoning: what are the relevant standards, architectures, reasoning methods, reasoning engines, techniques, and applications?
- 2) Provide a perspective on emerging technologies, techniques, and tools relevant for ontology and rule reasoning
- 3) Discuss the issues and architectures involved in developing applications that use ontology and rule reasoning
- 4) Describe visualization and explanation technologies and techniques for ontology and rule reasoning

Mini-Series Program – sessions

[each with co-chairs listed]

- 1. RulesReasoningLP: Mini-series Launch Event - Survey and Introduction [Leo Obrst, Benjamin Grosopf] [Today, October 24, 2013](#)
- 2. Concepts and Foundations of Rules and Ontologies: Logic Programs, Classical Logic, and Semantic Web - I [Leo Obrst, Harold Boley] [October 31, 2013](#)
- 3. Concepts and Foundations of Rules and Ontologies: Logic Programs, Classical Logic, and Semantic Web - II [Leo Obrst, Pascal Hitzler] [November 21, 2013](#)
- 4. Guide to Reasoning Applications Development and Cases [Henson Graves, Ken Baclawski] [December 19, 2013](#)
- 5. Rule Standards: Common Logic, RuleML, and RIF [Harold Boley, Adrian Paschke, Mike Dean] [January 9, 2014](#)
- ... And more to come ...

Today's Agenda

- Mini-series Launch Event - Survey and Introduction
 - Intro of the mini-series: This! (10 min)
 - Opening remarks by the champions, technology and community leaders (~2 min. each) (20 min total):
 - [MichaelGruninger](#), [MichaelKifer](#), [LeoraMorgenstern](#), [VinayChaudhri](#), [HaroldBoley](#), [HensonGraves](#), [JohnSowa](#), [KenBaclawski](#), [MikeDean](#) & [PeterYim](#)
 - Two survey / tutorials (by Leo and Benjamin) (25 min each) (50 min)
 - Q&A and open discussion (30 min)