
Preface

This volume collects the selected contributions of the RuleML2011@IJCAI Doctoral Consortium, the RuleML@IJCAI poster session papers, and the demo papers accepted for presentation at the RuleML2011@BRF Challenge.

The RuleML doctoral consortium is a new initiative of the International Symposium on Rules, RuleML, to attract and promote Ph.D. research in the area of Rules and Markup Languages. The doctoral symposium offers to students a close contact with leading experts on the field, as well as the opportunity to present and discuss their ideas in a dynamic and friendly setting. The first edition of the RuleML Doctoral Consortium took place during the first part of the 5th International Symposium on Rules (RuleML 2011@IJCAI) held on July 19th, 2011 in Barcelona. We include here the four selected papers of the doctoral consortium that resulted in lively presentations and discussion, which unfortunately cannot be reflected in print. Elisa Marengo's work, supervised by Matteo Baldoni and Cristina Baroglio, provides a way of specifying patterns of interactions by extending commitment protocols to account for temporal regulations. Woznowski's work, supervised by Alun Preece, describes a system architecture integrating rules with sensor middleware, with a pilot application to tracking of visitor locations in the healthcare domain. Antonius Weinzierl addresses the problem of inconsistency management in heterogeneous knowledge bases, described as multi-context systems. Jak's work proposes a rule-based query answering method for relational data, using hybrid reasoning and forward chaining, exploiting the Jess based implementation for querying a knowledge base of economic crimes.

The RuleML@IJCAI poster authored by Selner, Schwarz, and Zinser presented a poster paper describing IT service management combining business rules and business processes described in SVBR.

The Rule Challenge has reached its 5th year anniversary. It has taken place on November 4th, 2011 in Fort Lauderdale, Florida (USA), in the context of the second part of the 5th International Symposium on Rules (RuleML2011@BRF). The Rule Challenge is devoted to disseminate the most advanced practical experiences with rule-based applications, where state-of-the-art solutions and recent research proposals meet the concrete needs of the market. This year, four main topics have emerged:

1. Combination of rules, objects and ontologies, towards the development of integrated systems able to deal with knowledge-intensive domains and hybrid reasoning.

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2. eHealth and clinical applications, dealing with rules and very large information sources that combine structured and non-structured information.
 3. Rule editors that exploit parsing mechanism, ontologies and semi-automated composition techniques in order to facilitate the modelling task.
 4. Improvement of tools related to RuleML as a standardisation effort.

In particular, Bak, Falkowski and Jedrzejek present a system using rules and ontologies to query relational databases. O'Connor, Richards, Martins, Bingen, Tu and Das introduce a semantic web-enabled system to query and visualise temporal data. Erdem, Erdogan and Oztok describe a software system that provides biomedical query answering capabilities by exploiting Answer Set Programming. In their work, Sottara, Fry, Aliverti, Salatino, Harby, Killen, Nguyen and Wright define a unified architecture for a knowledge intensive patient healthcare management and implement it to warn the patients of an high probability of developing some diseases in the future. Salatino, Aliverti and Calcabrina show how processes and rules can be suitably combined to deal with complex scenarios such as service provision in the case of emergencies. Teymourian, Rohde and Paschke analyse the possibility to use background knowledge about events and their relation with other concepts to improve the quality of complex event processing, discussing the application of their approach in the stock market domain. Gordon presents a software that supports the construction, evaluation and visualisation of arguments by exploiting defeasible and semantic knowledge, and shows how it can be exploited to check compatibility issues among open-source software licenses. Marinos, Gazzard and Krause provide an implementation of a web-based SBVR editor capable of in-line automatic highlighting and auto-completion suggestions. Athan develops a web-based service for permitting the validation of XML instances using particular modules of the large family of RuleML1.0 language in Relax NG schemas. Finally Zaho, Paschke, Ali, and Boley present a web-based collaborative system that provides support to the organising committee of a symposium by efficiently handling complex queries on the domain.

We would like to warmly thank all students, supervisors, referees, co-chairs, members of the program committee and the organising team that made the doctoral consortium and the RuleML2011@IJCAI Doctoral Consortium and the RuleML2011@BRF Challenge a great success.

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