Preface

Artificial Intelligence (AI) has always been both a challenging and exciting field. Knowledge Engineering remains one of the main areas of research and development of Artificial Intelligence, penetrating and finding applications in specific fields of Computer Science. Research on Knowledge Engineering and Software Engineering have exchanged very fruitfully during the last decades.

Both consider the development of advanced tools and processes for building complex intelligent systems. Especially, declarative Software Engineering techniques such as knowledge-based systems, logic programming, constraint programming, have been established in various areas of Software Engineering, and in the context of the Semantic Web. Knowledge Engineering extensively uses current software tools, environments and languages for the development of intelligent systems. Some recent developments within the Business Rules community brought classic Knowledge Engineering even closer to the development of business-oriented software systems.

The 4th workshop on Knowledge Engineering and Software Engineering (KESE2008), held with 31st German Conference on Artificial Intelligence (KI2008), brought together both researchers and practitioners from the fields of Software Engineering and applied Artificial Intelligence. Latest research results as well as practical experience in the field was exchanged during the workshop. The topics of interest included the following:

- Application of AI and Knowledge Engineering methods in Software Engineering, such as knowledge and experience management, declarative, logic-based approaches, constraint programming, agent-oriented software engineering, issues of maintenance, and Business Rules.
- The use of Software Engineering tools in AI and Knowledge Engineering, e,g. engineering the Semantic Web, database and knowledge base management in AI systems, tools for intelligent systems, evaluation of intelligent systems, and process models.

This volume contains nine contributions presented at KESE2008, seven regular and two short papers. Diaconescu et al. discuss mapping ERDF(S) to Take inference engine vocabulary, and extending Take to support Open World Assumption with strong and weak negation predicates. Giurca and Pascalau introduce a JSON-based rule language and its JavaScript-based rule engine towards providing Web 2.0 applications with rule-based inference capabilities. Kluegl et al. introduce a system that uses a rule representation for information extraction tasks. Moreover they introduce a test-driven development process to engineer such rules. Nalepa and Kluza consider practical issues concerning the use of UML as a knowledge representation method for XTT rules, with an ultimate goal of combining the classic AI approach to knowledge-based systems design with Software Engineering modeling methods. Nalepa and Wojnicki propose a Knowledge Wiki System where knowledge is expressed in the Prolog language and an inference engine is coupled with the Wiki, providing means for an automated knowledge processing and interpretation. Newo and Althoff present a

model for simulating and researching people's behaviors in critical situations. The model is implemented by means of a multiagent system approach, realized by distributed knowledge-based systems with a specific focus on case-based reasoning technology. Peylo considers requirements engineering and argues that it is feasible to establish a domain ontology based on meta information and explanations that are represented as scripts. Moreover, he shows that this ontology has to be constructed in a dynamic way, to reflect the dynamics of requirements engineering process. Reichle and Bach present the retrieval and adaptation mechanisms used in an information system on travel medicine, docQuery. The retrieval method's main feature is an overall improved accuracy of retrieval results' similarities through a more diverse distribution of similarities over the retrieved result sets. Finally Ruh and Stolzenburg discuss a method for engineering and programming multi-robot systems, based on a combination of statecharts and hybrid automata. The formal specification method they use allows for a graphical presentation of the whole multiagent system behavior, and the specification can be directly executed on mobile robots.

The organizers would like to thank all who contributed to the success of the workshop: for the technical program we thank all authors for submitting papers to the workshop, and we thank the members of the program committee as well as the external reviewers for reviewing and collaboratively discussing the quality of the initial submissions. The reviewing process as well as proceeding preparation was performed with the use of EasyChair, for which the organizers thank Andrei Voronkov, the developer of the system. We would also like to thank Thomas Roth-Berghofer the KI2008 workshops chair for his efforts and support.

September 2008   Grzegorz J. Nalepa and Joachim Baumeister
                                              Workshop Organizers
                                                      KESE2008

Workshop Organization

The 4th Workshop on Knowledge Engineering and Software Engineering
(KESE2008)
was held as a one-day event at the
31st German Conference on Artificial Intelligence (KI2008)
on September 23, 2008 in Kaiserslautern, Germany.

Workshop Chairs and Organizers

Grzegorz J. Nalepa, AGH UST, Kraków, Poland
Joachim Baumeister, University Würzburg, Germany

Programme Committee

Klaus-Dieter Althoff, University Hildesheim, Germany
Joaquin Cañadas, University of Almería, Spain
Uli Geske, FhG FIRST, Berlin, Germany
Adrian Giurca, BTU Cottbus, Germany
Rainer Knauf, TU Ilmenau, Germany
Frank Puppe, University Würzburg, Germany
Dietmar Seipel, University Würzburg, Germany
Gerhard Weiss, SCCH, Austria

External Reviewers

Kerstin Bach, University Hildesheim, Germany
Jochen Reutelshoefer, University Würzburg, Germany

Table of Contents