

# Preface

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Intelligent knowledge-based systems have been successfully developed in many domains. They employ techniques and tools from the fields of knowledge engineering and software engineering. Thus, declarative software engineering techniques have been established in many areas, such as knowledge systems, logic programming, constraint programming, and lately in the context of the Semantic Web and business rules.

The eight workshop on Knowledge Engineering and Software Engineering (KESE8) was held at the ECAI 2012 (The European Conference on Artificial Intelligence) organized by European Coordinating Committee for Artificial Intelligence in Montpellier, France, and wants to bring together researchers and practitioners from both fields of software engineering and knowledge engineering, as well as the Semantic Web community. The intention was to give ample space for exchanging latest research results as well as knowledge about practical experience. Moreover the workshop endeavors to promote the use of KE techniques in SE problems, where significant benefits can be derived from their use. The general goal of the workshop was to show how the KE techniques can provide practical solutions in SE issues. On the other hand, the influence of SE methods and tools on the practical design of KBS within KE.

The principal focus of the Workshop was on methods of KE rooted in the symbolic logic-based representations and their novel applications in Software Engineering. Moreover, a synergistic use and development of these KE methods together with recent formalized and declarative SE methods, including Model-Driven Architecture and Development, ontological modelling as well as Business Process modelling was emphasized. Finally, the studies of the impact of these SE methods on the classic KE development processes were welcomed.

Topics of the workshop are generally related to the applications of symbolic KE techniques in SE as well as the use of KE in the SE practice. Specific topic the areas include but are not limited to:

- Knowledge and software engineering for the Semantic Web
- Ontologies in practical knowledge and software engineering
- Business Rules design, management and analysis

- Business Processes modelling in KE and SE
- Practical knowledge representation and discovery techniques in software engineering
- Agent-oriented software engineering
- Knowledge base management in KE systems
- Evaluation and verification of KBS
- Practical tools for KBS engineering
- Process models in KE applications
- Software requirements and design for KBS applications
- Declarative, logic-based, including constraint programming approaches in SE

This year, we received contributions focussing on different aspects of knowledge engineering and software engineering, promoting the influence and benefits of their joined use

Hatko et al. present a set of coverage metrics to assess the thoroughness of testing efforts for clinical guidelines in Diaflux language, providing some novel metrics (coverage metrics) and suggests the use of a graphical method (city metaphor) to visualize the coverage levels.

Águila and Sagrado introduce a metamodel and an UML profile for modeling of Bayesian Networks, enabling integration with UML diagrams and introducing such probabilistic graphical models in the MDA context.

The contribution of Giurca et al. elaborates a preference logic framework for conjoint analysis that can cope with the non-transitivity and inconsistency in preference data, useful when capturing psychological phenomena such as change or irrationality (inconsistency) as well as when formal explanations of decisions need to be computed.

A proposal for classifying errors in ontologies, with the aim of using such framework to map errors identified in automatic ontology building processes, is defined by Gherasim et al. providing a taxonomy of problems impacting the quality of automatically built ontologies and a classification with possible anomalies.

Kluza and Kaczor emboss the issue of a normalized Business Process Model and Notation (BPMN) modelling technique, presenting a survey on BPMN models' equivalences and several approaches to simplify BPMN models.

Kaczor and Nalepa compare two rule approaches, logically well defined rule processing systems like XTT2 and application driven intuitive popular rule-based tool such as CLIPS, in order to gain insights with respect to their applicability for business rule interchange.

Template-based Extensible Prototyping approach is introduced by Freiberg and Puppe, to perform usability evaluations of user interfaces in knowledge-based systems, useful for the validation of the collected knowledge.

Ligeza et al. describe a social platform called Social Threat Monitor (STM) aimed at improving safety of local communities in urban environment, managing and monitoring social threats through the collaborative knowledge engineering.

Negreanu and Mocanu present the specification and validation of a multi-agent system for requesting services using Event-B formal notation, as part of an intelligent environment for assisting elderly or disable people.

This year we also encouraged to submit tool presentations, i.e., system descriptions that clearly show the interaction between knowledge engineering and software engineering research and practice. At the workshop, one presentation about current tools was given: Baumeister et al. present KnowWE, a semantic wiki providing collaborative platform for knowledge acquisition and testing. It uses different types of knowledge ranging from semantically annotated text to strong problem-solving knowledge, adapting continuous integration approach of software engineering for knowledge engineering.

The organizers would like to thank all who contributed to the success of the workshop. 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 submissions. For the submission and reviewing process we used the EasyChair system, for which the organizers would like to thank Andrei Voronkov, the developer of the system. Last but not least, we would like to thank the organizers of the ECAI 2012 conference for hosting the KESE8 workshop.

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# Workshop Organization

The 8th Workshop on Knowledge Engineering and Software Engineering  
(KESE8)  
was held as a one-day event at the  
20th biennial European Conference on Artificial Intelligence  
(ECAI 2012)  
on August 28, 2012, Montpellier, France.

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