

W12 – ACKE '07

*International Workshop on Advances
in Conceptual Knowledge Engineering*

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This proceedings contains selected papers of ACKE'2007, the first international workshop on Advances in Conceptual Knowledge Engineering. ACKE'2007 was held on September 7th 2007 in Regensburg, Germany, and was organized jointly by the El-Manar University, Reunion University and the Artois University. Knowledge engineering (KE) consists in building, maintaining and developing knowledge-based systems.

It has a great deal in common with software engineering, and is related to many computer science domains such as artificial intelligence, databases, data mining, expert systems, decision support systems, user modelling, web technologies, computational linguistics and geographic information systems. Knowledge engineering is also related to mathematical logic, as well as strongly involved in cognitive science and sociocognitive engineering where the knowledge is produced by socio-cognitive aggregates (mainly humans) and is structured according to our understanding of how human reasoning and logic works.

Various activities of KE specific for the development of a knowledge-based system: Assessment of the problem; Development of a knowledge-based system shell/structure; Implementation of the structured knowledge into knowledge-bases; Acquisition and structuring of the related information, knowledge and specific preferences; Testing and validation of the inserted knowledge; Integration and maintenance of the system; Revision and evaluation of the system.

Being still more art than engineering, KE is not as neat as the above list in practice. The phases overlap, the process might be iterative, and many challenges could appear. Recently, meta-knowledge engineering emerges as a new formal systemic approach to the development of a unified knowledge and intelligence theory. Conceptual knowledge engineering aims to put more emphasis on the interrelationships among the basic elements within a larger structure that enables them to function together during the KE process. One major goal here is to focus the KE process onto the design of conceptual models, methods and structures. Our objective in this workshop is to provide information on recent advances on KE using conceptual similarity based measures, concept lattices, conceptual graphs, rough sets, description logics, concept mapping, ontologies and more, in both theoretical and applicational aspects of KE.

Areas of interest of ACKE include but are not limited to Conceptual structures, Relationship of Formal Concept Analysis (FCA) with other methods of data analysis (clustering, association rules, classification, etc.), data for Formal Concept Analysis (object-attribute data, pre-processing of data, conceptual scaling, fuzzy attributes, etc.) and applications of FCA on semantic web and ontologies.

Contributions to ACKE'2007 were refereed by at least three anonymous and independent reviewers on the basis of their originality, quality, significance, and presentation.

The scientific program of ACKE'2007 also included an invited talk. We wish to express our gratitude to Gerd Stumme (Kassel University, Germany)

We would like to express our thanks to the authors who submitted their papers to ACKE'2007. In addition, we would like to take this opportunity to acknowledge the tireless cooperation and support of the reviewers, even if deadlines were tight. Reviewer list follows:

Jaume Baixeries (*UPC, Spain*)
José Luis Balcazar (*UPC, Spain*),
Claudio Carpineto (*Fondazione Ugo Bordoni, Italy*),
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Mondher Maddouri (*INSAT, Tunisia*),
Pascal Poncelet (*EMA/LGI2P, France*),
François Rioult (*Université de Caen, France*),
Ezzeddine Zagrouba (*ISI, Tunisia*).

We would like to thank all conference attendees for their participation. We hope all attendees took time to exchange ideas with each other and enjoyed ACKE'2007.

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Jean Diatta
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