Workshop Notes

International Workshop

"What can FCA do for Artificial Intelligence?"

FCA4AI

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What FCA Can Do for Artificial Intelligence?
FCA4AI: An International Workshop

Preface

Formal Concept Analysis (FCA) is a mathematically well-founded theory aimed at data analysis and classification. FCA allows one to build a concept lattice and a system of dependencies (implications) which can be used for many AI needs, e.g. knowledge processing involving learning, knowledge discovery, knowledge representation and reasoning, ontology engineering, as well as information retrieval and text processing. Thus, there exist many "natural links" between FCA and AI.

Recent years have been witnessing increased scientific activity around FCA, in particular a strand of work emerged that is aimed at extending the possibilities of FCA w.r.t. knowledge processing, such as work on pattern structures and relational context analysis. These extensions are aimed at allowing FCA to deal with more complex than just binary data, both from the data analysis and knowledge discovery points of view and from the knowledge representation point of view, including, e.g., ontology engineering.

All these works extend the capabilities of FCA and offer new possibilities for AI activities in the framework of FCA. Accordingly, in this workshop, we are interested in two main issues:

- How can FCA support AI activities such as knowledge processing (knowledge discovery, knowledge representation and reasoning), learning (clustering, pattern and data mining), natural language processing, information retrieval.
- How can FCA be extended in order to help AI researchers to solve new and complex problems in their domains.

The workshop is dedicated to discuss such issues. The papers submitted to the workshop were carefully peer-reviewed by two members of the program committee and 11 papers with the highest scores were selected. We thank all the PC members for their reviews and all the authors for their contributions. We also thank the organizing committee of ECAI-2012 and especially workshop chairs Jérôme Lang and Michèle Sebag for the support of the workshop.

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