

# Preface

Preferences are a central concept of decision making. As preferences are fundamental for the analysis of human choice behavior, they are becoming of increasing importance for computational fields such as artificial intelligence, databases, and human-computer interaction. Preference models are needed in decision-support systems such as web-based recommender systems, in automated problem solvers such as configurators, and in autonomous systems such as Mars rovers. Nearly all areas of artificial intelligence deal with choice situations and can thus benefit from computational methods for handling preferences. Moreover, social choice methods are also of key importance in computational domains such as multi-agent systems.

This broadened scope of preferences leads to new types of preference models, new problems for applying preference structures, and new kinds of benefits. Preferences are studied in many areas of artificial intelligence such as knowledge representation, multiagent systems, game theory, social choice, constraint satisfaction, decision making, decision-theoretic planning, and beyond. Preferences are inherently a multidisciplinary topic, of interest to economists, computer scientists, operations researchers, mathematicians and more.

This workshop continues a series of events on preference handling at AAAI-02, Dagstuhl in 2004, IJCAI-05, ECAI-06, and VLDB-07, which are listed on [wikix.ilog.fr/wiki/bin/view/PreferenceWS](http://wikix.ilog.fr/wiki/bin/view/PreferenceWS)

The workshop provides a forum for presenting advances in preference handling and for exchanging experiences between researchers facing similar questions, but coming from different fields. The workshop builds on the large number of AI researchers working on preference-related issues, but also seeks to attract researchers from databases, multicriteria decision making, economics, and so on. These different research areas are represented in the organization committee.

The Fourth Multidisciplinary Workshop on Advances in Preferences Handling includes twenty-four papers about different computational aspects of preference handling. This includes methods for the modeling, representation, aggregation, elicitation, learning, and management of preferences and for reasoning and computation with preferences. The papers study the usage of preferences in computational tasks from decision making, database querying, web search, personalized human-computer interaction, personalized recommender systems, e-commerce, multi-agent systems, game theory, social choice, combinatorial optimization, and planning. We believe that the workshop program will improve the overall understanding of the benefits of preferences for those tasks and continue the cross-fertilization between different fields. We welcome all participants to this AAA08 workshop on handling and encourage them to have stimulating discussions about this topic.

– Jan Chomicki, Vincent Conitzer, Ulrich Junker, Patrice Pern