Preface

Preferences are gaining more and more attention in AI and CP. As described in the article of Jon Doyle and Richmond Thomason about qualitative decision theory (AI Magazine, 1999), AI provides qualitative methods for treating preferences that can improve or complement numerical methods for treating preferences from classical decision theory. Preferences prove essential in treating conflicting information in nonmonotonic reasoning, reasoning about action and time, planning, diagnosis, configuration, and other areas of knowledge representation and reasoning. Constraint programming uses preferences to treat soft constraints and to reduce search effort.

Preferences complement constraints and represent an AI counterpart to objective or utility functions. Preferences allow one to treat conflicting information and to choose among alternatives, such as most-specific default rules in a taxonomy, preferred user choices in web-based configuration, and preferred start dates for scheduling activities. In contrast to hard constraints, preferences do not eliminate the non-selected alternatives, which may become interesting if additional information is added. AI permits complex preference representations and thus allows systems to reason with and about preferences. AI thus provides a new perspective for formalizing information that is essential for many decision making problems, including web-based configuration, scheduling, and robot planners.

Although several approaches for treating preferences have been developed in AI, the mathematical formulations as well as the applications of the preferences are often quite different. The purpose of this workshop is to bring researchers working on preferences in different areas together and to provide a forum for discussing and exchanging ideas on this topic.

We are pleased that this first workshop on qualitative and symbolic methods on preferences in AI and CP found an excellent resonance. The sixteen papers well represent ongoing research on preferences in different sub-areas of AI and CP. They cover preferences in qualitative decision theory, preference elicitation, soft constraints, preferences for constraint-based optimization, and preferences in nonmonontonic reasoning. In addition to this, Jon Doyle will give an invited talk about preferences in AI, addressing problems and prospects based on long research experience with the topic.

The workshop thus provides an excellent opportunity to get an overview about current work on preferences in AI and CP, to exchange experiences with different (symbolic) approaches for treating and applying preferences, and to discuss challenging questions about this topic. In order to allow stimulating discussions, we include a panel discussion in each session.

We welcome all participants of the 'AAAI-02 workshop on preferences and AI and CP: symbolic methods' and hope that this event will generate new ideas and insights into the possibilities of preferences.

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