Preface

Our motivation for organizing the 1998 AAAI Workshop on *Case-Based Reasoning Integrations* was to promote the systematic study of multimodal reasoning architectures (i.e., for intelligent systems) that have a case-based reasoning (CBR) component. This topic is of interest to researchers and practitioners pursuing novel methods for embedding CBR in a multimodal reasoning task (e.g., three roles are as master, slave, or collaborator). New integration methodologies are emerging as researchers harness the synergistic effects of these novel reasoning combinations as well as the various control strategies for interleaving the processes. Our goal was to elicit and elucidate a concise characterization and categorization of CBR integrations, and then publish our analysis in a joint publication.

Many CBR workshops have focussed on aspects of the CBR problem-solving cycle. However, no workshop has yet focussed on issues of integration, even though most CBR systems are comprised of an integration with other reasoning modules. Therefore, we believe this is a good time to explore issues associated with integrating CBR with other reasoning methods.

Presentations at this workshop defined core issues in integrating CBR with other forms of reasoning, whether sequential or interleaved, as master, slave, or in a collaborating role. The integrations encompassed a CBR component working in concert with a large variety of reasoning methodologies including: rule-based reasoning, bayesian networks, constraint-based reasoning, neural networks, planning, data-mining, numerical optimizations, and genetic algorithms.

Our terrific invited speakers surveyed integrations from a variety of both academic and industrial perspectives: Mary Lou Mahar (CBR and Design), Janice Glasgow (CBR and Image-Based Reasoning), and Marc Goodman (CBR in the Pipeline). We reserved generous amounts of time for structured open discussion periods, and held four sessions. The first, lead by David Leake, investigated issues involving the integration of Rule-Based Reasoning with CBR. The second discussion centered on integrations incorporating a Constraint-Based Reasoning component and was lead by Mohammed Sqalli. The third, lead by Marie desJardins and Héctor Muñoz-Avila, focused on integrations involving a Planning component. A final panel identified core issues surrounding integrations and their synergistic effects and was lead by Kevin Ashley with Karl Branting and Edwina Rissland providing expertise. In addition, there was an extensive poster session promoting additional technical exchanges into integrating multiple reasoning strategies.

Many people helped to organize this workshop. We especially thank our organizing committee members, namely Agnar Aamodt, Karl Branting, Claire Cardie, Andy Golding, John Hunt, Brian Lees, Luigi Portinale, and Francesco Ricci, for their assistance throughout the organizing and reviewing processes. Thanks also to AAAI officials (e.g., David Leake) and staff (Carol Hamilton and several others) for their tremendous support, without which this workshop could not have taken place.

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