

Preface

Case-based reasoning (CBR) is an Artificial Intelligence (AI) technique that combines problem solving with continuous learning in advanced decision support systems. CBR collects and exploits the experiential knowledge embedded in previously encountered and solved situations, which are known as *cases*. Thus, by using CBR, the difficulties of knowledge acquisition and of knowledge representation are often lessened. CBR research is now mature and very active, as testified by the large number of theoretical and applicative works that can be found in the literature.

In this book, we have collected a selection of papers on very recent CBR applications. Very interestingly, most of them can be classified as Process-oriented Case-based Reasoning (PO-CBR) works, since they present applications in the fields of business process management, software process reuse, and trace-based reasoning. Such a convergence testifies the growing interest of the CBR community towards this specific research direction. Indeed, also the non-PO-CBR works in this book have some relations with the topic, specifically as regards case acquisition and case representation.

Some of these contributions propose methodological solutions that, even though applied to a specific domain, could be properly adapted to different applications as well. Other chapters report on frameworks and tools that have now reached a very mature development stage.

The chapters thus testify the flexibility of CBR, its capability to solve or handle issues which would be too difficult to manage with other classical AI methods and techniques, and, in conclusion, its applicability in fields where experiential knowledge plays a key role in decision making.

We believe that this book will be valuable to the application engineers, scientists, professor and students who wish to use case-based reasoning paradigms.

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