

## Preface

*Innovative Applications of Artificial Intelligence 4* is the fourth volume in a series highlighting the successful application of artificial intelligence (AI) techniques to real-world problems. The applications selected this year illustrate that AI has matured as a set of commercially viable technologies. AI technology has infiltrated a huge number of companies around the world and has enabled these companies to solve significant business problems and achieve major business benefits.

In the initial volume of this series, most of the applications represented the first attempts by various organizations to put AI to practical use. In this volume, we see the next generation of applications developed in organizations that no longer view AI as risky, but rather as stable technology. American Express and Swiss Bank Corporation, for example, are each working toward a corporate computing environment in which cooperative AI applications interact. In the first volume, we saw many applications by companies that traditionally have been early adopters of new technology; this year we see that AI applications are appearing also in companies that traditionally have waited to use proven technologies.

The book presents AI applications in a variety of industries such as finance and banking, telecommunications, automotive and transportation. The applications address a variety of tasks such as customer service, data analysis, design, and planning. As computer scientists, we are particularly interested this year to see AI applied to our own field. Three applications address different aspects of software development:

automatic program generation, inspection and analysis of source code, and analysis of core dumps. Although many applications are aimed at solving problems local to a single organization, the PHAROS system, developed by National Westminster Bank, illustrates how AI can be used to help companies adjust to more global changes, such as the formation of a single European market.

The applications described in this book not only demonstrate the commercial value of software systems employing AI techniques but also delineate the process by which these software systems are developed and deployed. The book points out the techniques or combination of techniques that are useful in particular circumstances or the difficulties encountered in applying or integrating different techniques. It teaches about project management, for example, the steps required in planning and coordinating the many activities that lead to the finished software product. It illustrates the importance of understanding and addressing the needs of the user community. Each application presents a case study that contains valuable lessons for those who will develop future AI applications.

*– Carlisle Scott & Phil Klahr*