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## Foreword

A research text book aims to provide a unique and long lasting statement about the current thinking in a given subject area. This book delivers exactly this in the area of knowledge engineering, i.e., the design and construction of systems that convert data into knowledge.

Knowledge is fundamental to intelligent systems, it provides us with the stuff with which we are able to extend the abilities of our minds. It allows us to automatically assist humans to manage the world around us. It allows us to build a better world.

Knowledge is gained from data and, as we are all too aware, the amount of data in all forms is growing at a faster rate every year. Unfortunately, this data is often unstructured, noisy, incomplete and uncertain, making our job all the more difficult. Managing this data and turning it into knowledge is a vital endeavour. Unfortunately, the knowledge held in the data can be complex, dealing with this complexity is still unsolved.

We desperately need well principled methods that can be used again and again to reliably engineer systems. Methods that can be applied by software engineers in their every day work to develop powerful systems that will really help people. Providing methods to do this is exactly what this book is about.

This book presents a wide range of methods that tackle these issues. It cannot hope to cover all of them, but the areas it has covered are important and timely. The chapters are carefully presented with the latest findings. This book provides a stepping stone for researchers to build on, providing the details not found in journal papers, with a quality missing in many papers.

I hope that researchers and others will be inspired by many of the ideas presented and will use and build upon them.

Prof. Jim Austin  
York, UK, May 2003