Prolog Programming for Artificial Intelligence

The second edition is a complete revision of the techniques exposed in the book to reflect advances in the field the authors have made in the last ten years. They have updated all the chapters, added two new ones and considerably expanded the sections on machine-learning techniques.

The approach adopted in this book is based on methodological elements together with concrete examples to help students learn to design their own programs. Each new aspect is illustrated by short examples and full programs. A wide range of exercises, computer-based and paper-and-pencil ones, are included, with answers to the majority of them given in the book. For the harder exercises, suitable test programs are included. One chapter can be covered in each week.

The topics that students find more difficult, such as recursion and lists, are not covered in the first year course, but are taken up in the second year, together with many others.

This book covers all that is needed by students on a one-year introductory Prolog course at first or second year degree level. It is also useful for students on short courses intended to give an introduction to programming. The approach adopted in this book is thus based on methodological elements together with concrete examples to help students learn to design their own programs. Each new aspect is illustrated by short examples and full programs. A wide range of exercises, computer-based and paper-and-pencil ones, are included, with answers to the majority of them given in the book. For the harder exercises, suitable test programs are included. One chapter can be covered in each week.

The areas covered include: simple and extended Prolog environments; the notion of a program, and of declarative and imperative programming styles; nonnumeric and numeric data types (such as lists, arrays, sets, and trees), and the notion of computation in declarative and imperative style; rules in Prolog and semantic rules; the representation of functions, especially recursive ones; the representation of relations, especially functional and reflexive ones; the negative and existential quantification, and the representation of them in Prolog; the combination of rules and functions in Prolog programs; the representation of exceptions; the use of Prolog in computational linguistics and artificial intelligence.

This book is intended for students who have a basic introduction to programming already and wish to embark on a more serious study of Prolog. It is also intended for research workers who need to use logic programming for their research. This book is Prolog for Students, with examples from AI, not a book on AI using Prolog. The text assumes access to a Prolog running environment. The student is invited to do and to test on his or her machine. Complete answers are given in Appendix A, at the end of the book.
made wings for Icarus and the latter a blacksmith god, testify that the concept of robot, if not the name, was ancient even in Aristotle's time.

article of property". He suggests that slaves or subordinates might not be necessary if "each instrument could do its own ... of Hephaestus". Reference to the legendary robots devised by these mythological technocrats, the former an artificer who

in robotics [Brooks, 1991a; 1991b]. The quintessence of an agent is an intelligent, willing slave. Speculation in the ... example is found in Aristotle's Politics written in the fourth century BC. Aristotle classifies the slave as "an animate

agents rose to prominence in the mid-1990s because of the World Wide Web and an ill-structured network of multimedia ... programming which C++ and more recently Java popularized. Another strand of influence came from a revival of interest

have made further reorganisations and improvements in presentation, and have corrected a number of minor errors. We thank ... for careful proofreading. Cambridge, England W.F.C. January,1987 C.S.M. PREFACE TO THE

Agent-Oriented Programming We have added new material to Chapter 3 to give an account of up-to-date programming ... new information on syntax errors. Operator precedences are now compatible with the most widely-used implementations. We

Prolog is an excellent introduction to both Prolog and Visual Prolog. Designed for newcomers to Prolog with some ... along a logical, easy-to-grasp path as he explains the beginnings of Prolog, classic algorithms to get you started, and

involving AI, logic, language parsing, computational linguistics, and theorem-proving. Now, Visual Prolog (available as a ... and rather large provided Program Foundation Class (PFC) libraries. A Guide to Artificial Intelligence with Visual

ming and Prolog, before starting doing. Chapters 1 and 2 were also kept for the sake of unity of the whole material. In ... are novel aspects of programming. Prolog is enhanced as a computer programming language used for solving problems that

because it is shorter and more concise, more powerful and understandable than present-day languages. Logic highlights ... its inverse, and supporting deductive retrieval of information. This is a book about using Prolog. Its real point is the

developments in deep learning, including applications of neural networks to generate creative content such as text, music ... two practical examples explaining Bayes' theorem and its relevance in everyday life (NEW); discusses search algorithms,

associated website; contains numerous study exercises and solutions, highlighted examples, definitions, theorems, and ... search, probabilistic reasoning, machine learning and data mining, neural networks and reinforcement learning; reports on

Artificial Intelligence This accessible and engaging textbook presents a concise introduction to the exciting field of ... field, describing practical algorithms and concrete applications in the areas of agents, logic, search, reasoning under

in order to achieve optimal performance and productivity. Hands-On Artificial Intelligence with Java for Beginners
This book is for people who have done some programming, either in ...

The emphasis of this book is on a simplified and disciplined methodology for discerning the mathematical structures related to a problem, and then turning these structures into Prolog programs. This book is therefore not...

A relatively pure subset of Prolog is used, which includes the 'cut', but no input/output, no assert/retract, no syntactic extensions such as if then-else and grammar rules, and hardly any built-in predicates apart...

The presentation, which I believe is novel for a Prolog programming text, is in terms of an outline of...

Artificial Intelligence This text covers natural language processing in Prolog and presumes knowledge of Prolog, but not...

Prolog Programming for Students Summary Introducing Data Science teaches you how to accomplish the fundamental tasks that...

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About the Book Introducing Data Science covers the fundamental tasks that occupy data scientists. You'll explore data visualization, graph databases, the use of...

NoSQL, and the data science process. You'll use the Python language and common Python libraries as you experience...

Handling large data on a single computer First steps in big data Join the NoSQL movement The rise of graph databases Text mining and text analytics Data visualization to the end user

Turbo Prolog The fourth edition of this best-selling guide to Prolog and Artificial Intelligence has been updated to...

Divided into two parts, the first part of the book introduces the programming language Prolog, while the second part teaches...

is meant to teach Prolog as a practical programming tool and so it concentrates on the art of using the basic mechanisms of Prolog to solve interesting problems. The fourth edition has been fully revised and extended to provide an even...

applications, making it a self-contained guide to Prolog, AI or AI Programming for students and professional programmers.

Theory of Computer Science Logic Programming is the name given to a distinctive style of programming, very different from...

Prolog is a good choice for developing complex applications, especially in the field of Artificial Intelligence. Logic Programming with Prolog does not assume that the reader is an...

starts from scratch and aims to arrive at the point where quite powerful programs can be written in the language. It is...

exercises so that readers may check their own progress. A glossary of the technical terms used completes the book. This...

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