



METADATA

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Abstract

Logical Programming (LP) is one of the most interesting programming schools, significantly different from the "classical" schools of imperative and object-oriented programming. The use of mathematical logic as an abstraction tool for describing computations and the exploitation of its proof procedures lead to compact programs, which find applications in complex and interesting fields, such as Artificial Intelligence and the Semantic Web. However, this high-level approach to programming creates problems for those who come into contact with LP for the first time, on the one hand because it requires them to adopt a declarative approach to program development that is "foreign" to that of the dominant languages, and on the other hand because it requires learning representation and problem-solving techniques that, although generally applicable in programming, are not often

used in other schools, with recursion being a classic example. This book aims to meet the above requirements and serve as a basic textbook for anyone wishing to delve into the art and techniques of LP. Using the main representative of the LP school, the Prolog language, as a vehicle, the book aims to: (a) briefly outline the theoretical foundations of LP, namely first-order predicate logic and the principle of analysis, (b) to present in depth the Prolog programming language, the available predicates and how these, when integrated into LP techniques, constitute powerful tools for problem solving, (c) to present applications, such as the development of intelligent systems, in which LP offers significant advantages, and finally, (d) to develop the reader's programming skills, such as recursion and hierarchical program development, applicable to all programming schools.

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