



Constraint Satisfaction in Logic Programming

By Pascal Van Hentenryck

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Constraint Satisfaction in Logic Programming By Pascal Van Hentenryck

This book tackles classic problems from operations research and circuit design using a logic programming language embedding consistency techniques, a paradigm emerging from artificial intelligence research. Van Hentenryck proposes a new approach to solving discrete combinatorial problems using these techniques.

Logic programming serves as a convenient language for stating combinatorial problems, but its "generate and test" paradigm leads to inefficient programs. Van Hentenryck's approach preserves one of the most useful features of logic programming - the duality of its semantics - yet allows a short development time for the programs while preserving most of the efficiency of special purpose programs written in a procedural language.

Embedding consistency techniques in logic programming allows for ease and flexibility of programming and short development time because constraint propagation and tree-search programming are abstracted away from the user. It also enables logic programs to be executed efficiently as consistency techniques permit an active use of constraints to remove combinations of values that cannot appear in a solution. Van Hentenryck presents a comprehensive overview of this new approach from its theoretical foundations to its design and implementation, including applications to real life combinatorial problems.

The ideas introduced in *Constraint Satisfaction in Logic Programming* have been used successfully to solve more than a dozen practical problems in operations research and circuit design, including disjunctive scheduling, warehouse location, cutting stock car sequencing, and microcode labeling problems.

Pascal Van Hentenryck is a member of the research staff at the European Computer Industry Research Centre. *Constraint Satisfaction in Logic Programming* is based on research for the Centre's CHIP project. As an outgrowth of this project, a new language (CHIP) that will include consistency techniques has been developed for commercial use. The book is included in the Logic Programming series edited by Ehud Shapiro.

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Editorial Review

About the Author

Pascal Van Hentenryck is Professor in the Department of Computer Science at Brown University. He is the author or editor of several MIT Press books.

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The particular book Constraint Satisfaction in Logic Programming will bring you to the new experience of reading a new book. The author style to describe the idea is very unique. In case you try to find new book you just read, this book very acceptable to you. The book Constraint Satisfaction in Logic Programming is much recommended to you to learn. You can also get the e-book from your official web site, so you can quicker to read the book.

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