

### NEW BOOK ANNOUNCEMENT: Martin Pelikan

#### AUTHOR

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#### TITLE

Hierarchical Bayesian Optimization Algorithm: Toward a New Generation of Evolutionary Algorithms

#### PUBLISHER

Springer, 2005, XVIII, 166 p., Hardcover ISBN: 3-540-23774-7

#### ABOUT

This book provides a framework for the design of competent optimization techniques by combining advanced evolutionary algorithms with state-of-the-art machine learning techniques. The primary focus of the book is on two algorithms that replace traditional variation operators of evolutionary algorithms by learning and sampling Bayesian networks: the Bayesian optimization algorithm (BOA) and the hierarchical BOA (hBOA). They provide a scalable solution to a broad class of problems. The book provides an overview of evolutionary algorithms that use probabilistic models to guide their search, motivates and describes BOA and hBOA in a way accessible to a wide audience and presents numerous results confirming that they are revolutionary approaches to black-box optimization.

#### KEYWORDS

- Bayesian Networks
- Black-Box Optimization
- Genetic and Evolutionary Algorithms
- Hierarchical Problem Solving
- Probabilistic Model-Building Genetic Algorithms
- Scalable Optimization

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Foreword by David E. Goldberg

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#### HOW TO ORDER

<http://www.cs.umsl.edu/~pelikan/book.html>

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