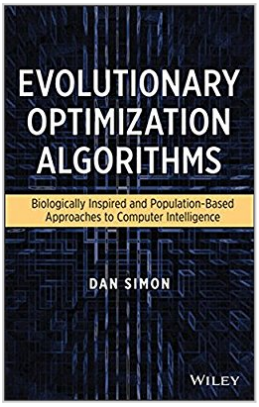

Evolutionary Optimization Algorithms

By Dan Simon

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A clear and lucid bottom-up approach to the basic principles of evolutionary algorithms

Evolutionary algorithms (EAs) are a type of artificial intelligence. EAs are motivated by optimization processes that we observe in nature, such as natural selection, species migration, bird swarms, human culture, and ant colonies.

This book discusses the theory, history, mathematics, and programming of evolutionary optimization algorithms. Featured algorithms include genetic algorithms, genetic programming, ant colony optimization, particle swarm optimization, differential evolution, biogeography-based optimization, and many others.

Evolutionary Optimization Algorithms:

- Provides a straightforward, bottom-up approach that assists the reader in obtaining a clear—but theoretically rigorous—understanding of evolutionary algorithms, with an emphasis on implementation
- Gives a careful treatment of recently developed EAs—including opposition-based learning, artificial fish swarms, bacterial foraging, and many others—and discusses their similarities and differences from more well-established EAs
- Includes chapter-end problems plus a solutions manual available online for instructors
- Offers simple examples that provide the reader with an intuitive understanding of the theory
- Features source code for the examples available on the author's website
- Provides advanced mathematical techniques for analyzing EAs, including Markov modeling and dynamic system modeling

Evolutionary Optimization Algorithms: Biologically Inspired and Population-Based Approaches to Computer Intelligence is an ideal text for advanced undergraduate students, graduate students, and professionals involved in engineering and computer science.

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Editorial Review

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