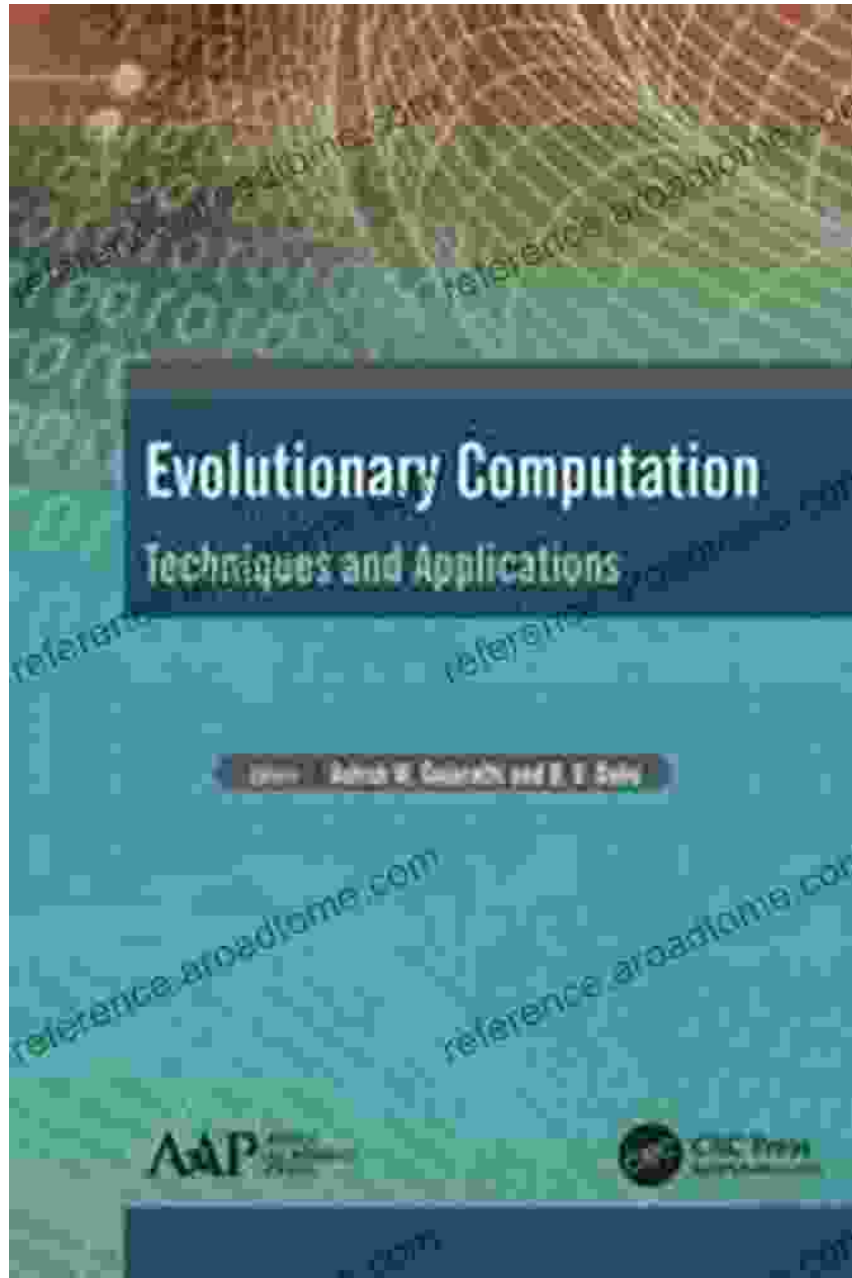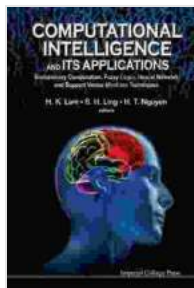# Unlock the Power of Evolution: Applications of Evolutionary Computation

Applications of Evolutionary Computation is a comprehensive guide to the applications of evolutionary computation (EC) in various fields. EC is a powerful tool for solving complex optimization problems, and it has been

used to great success in areas such as design, engineering, finance, and medicine.

This book provides a detailed overview of the principles of EC and how it can be used to solve real-world problems. It also includes a number of case studies that demonstrate the power of EC in a variety of applications.

Applications of Evolutionary Computation: 24th International Conference, EvoApplications 2024, Held as Part of EvoStar 2024, Virtual Event, April 7–9, ... Notes in Computer Science Book 12694)

⭐⭐⭐⭐⭐ 5 out of 5

Language	: English
File size	: 105566 KB
Text-to-Speech	: Enabled
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 1481 pages

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If you are interested in learning more about EC and how it can be used to solve problems in your field, then this book is the perfect resource for you.

- **Authors:** Xin-She Yang

- **Publisher:** Wiley

- **Publication Date:** 2013

- **:** 978-1-118-68657-2

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What is Evolutionary Computation?

Evolutionary computation (EC) is a subfield of artificial intelligence that uses the principles of evolution to solve complex optimization problems. EC algorithms are inspired by the process of natural selection, in which the fittest individuals in a population survive and reproduce, while the less fit individuals die out.

EC algorithms are used to solve a wide range of problems, including:

- Optimization problems

- Scheduling problems

- Routing problems

- Design problems

- Engineering problems

- Finance problems

- Medicine problems

Benefits of Evolutionary Computation

There are many benefits to using EC to solve problems, including:

- **EC algorithms are efficient.** EC algorithms can solve complex problems quickly and efficiently.

- **EC algorithms are robust.** EC algorithms are robust to noise and uncertainty, and they can find good solutions even when the data is incomplete or inaccurate.
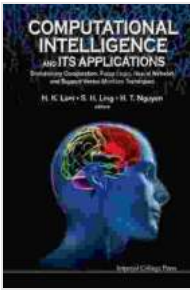
- **EC algorithms are scalable.** EC algorithms can be used to solve problems of any size, and they can be easily parallelized to run on multiple processors.

Case Studies

The following are a few case studies that demonstrate the power of EC in a variety of applications:

- **Design of car engines:** EC algorithms have been used to design car engines that are more fuel-efficient and powerful.

- **Scheduling of aircraft:** EC algorithms have been used to schedule aircraft to minimize delays and maximize profits.

- **Routing of delivery trucks:** EC algorithms have been used to route delivery trucks to minimize travel time and costs.

- **Diagnosis of medical conditions:** EC algorithms have been used to diagnose medical conditions by analyzing patient data.

- **Discovery of new drugs:** EC algorithms have been used to discover new drugs by identifying molecules with promising therapeutic properties.
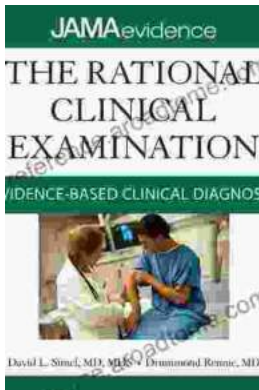
Evolutionary computation is a powerful tool for solving complex optimization problems. EC algorithms are efficient, robust, and scalable, and they have been used to great success in a variety of applications. If you are interested in learning more about EC and how it can be used to solve problems in your field, then this book is the perfect resource for you.

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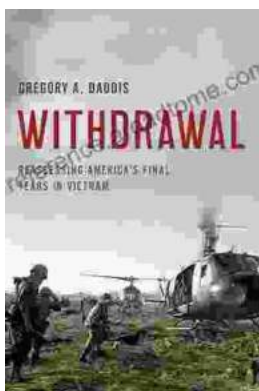
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