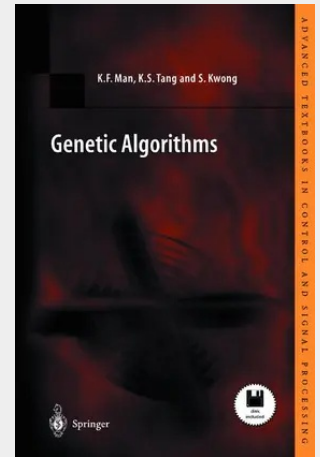


Genetic Algorithms

Concepts and Designs

Genetic Algorithms (GA) as a tool for a search and optimizing methodology has now reached a mature stage. It has found many useful applications in both the scientific and engineering arenas. The main reason for this success is undoubtedly due to the advances that have been made in solid-state microelectronics fabrication that have, in turn, led to the proliferation of widely available, low cost, and speedy computers. The GA works on the Darwinian principle of natural selection for which the noted English philosopher, Herbert Spencer coined the phrase "Survival of the fittest". As a numerical optimizer, the solutions obtained by the GA are not mathematically oriented. Instead, GA possesses an intrinsic flexibility and the freedom to choose desirable optima according to design specifications. Whether the criteria of concern be nonlinear, constrained, discrete, multimodal, or NP hard, the GA is entirely equal to the challenge. In fact, because of the uniqueness of the evolutionary process and the gene structure of a chromosome, the GA processing mechanism can take the form of parallelism and multiobjective. These provide an extra dimension for solutions where other techniques may have failed completely. It is, therefore, the aim of this book to gather together relevant GA material that has already been used and demonstrated in various engineering disciplines.

Genetic Algorithms (GA) as a tool for a search and optimizing methodology has now reached a mature stage. It has found many useful applications in both the scientific and engineering arenas. The main reason for this success is undoubtedly due to the advances that have been made in solid-state microelectronics fabrication that have, in turn, led to the proliferation of widely available, low cost, and speedy computers. The GA works on the Darwinian principle of natural selection for which the noted English philosopher, Herbert Spencer coined the phrase "Survival of the fittest". As a numerical optimizer, the solutions obtained by the GA are not mathematically oriented. Instead, GA possesses an intrinsic flexibility and the freedom to choose desirable optima according to design specifications. Whether the criteria of concern be nonlinear, constrained, discrete, multimodal, or NP hard, the GA is entirely equal to the challenge. In fact, because of the uniqueness of the evolutionary process and the gene structure of a chromosome, the GA processing mechanism can take the form of parallelism and multiobjective. These provide an extra dimension for solutions where other techniques may have failed completely. It is, therefore, the aim of this book to gather together relevant GA material that has already been used and demonstrated in various engineering disciplines.



53,49 €

49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781852330729

Medium: Buch

ISBN: 978-1-85233-072-9

Verlag: Springer

Erscheinungstermin: 25.02.1999

Sprache(n): Englisch

Auflage: 1999

Serie: Advanced Textbooks in Control and Signal Processing

Produktform: Kartoniert

Gewicht: 546 g

Seiten: 344

Format (B x H): 155 x 235 mm

