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**Genetic Algorithms in Java Basics** Lee Jacobson, Burak Kanber, 2015-11-28 Genetic Algorithms in Java Basics is a brief introduction to solving problems using genetic algorithms with working projects and solutions written in the Java programming language This brief book will guide you step by step through various implementations of genetic algorithms and some of their common applications with the aim to give you a practical understanding allowing you to solve your own unique individual problems After reading this book you will be comfortable with the language specific issues and concepts involved with genetic algorithms and you ll have everything you need to start building your own Genetic algorithms are frequently used to solve highly complex real world problems and with this book you too can harness their problem solving capabilities Understanding how to utilize and implement genetic algorithms is an essential tool in any respected software developers toolkit So step into this intriguing topic and learn how you too can improve your software with genetic algorithms and see real Java code at work which you can develop further for your own projects and research Guides you through the theory behind genetic algorithms Explains how genetic algorithms can be used for software developers trying to solve a range of problems Provides a step by step guide to implementing genetic algorithms in Java [Genetic Algorithms in Java](#)

Lee Jacobson, 2015-03-07 Genetic Algorithms in Java is an applied approach to learning and solving problems using genetic algorithms with working projects and solutions written in the Java programming language This book will guide you step by step through various implementations of Genetic Algorithms and some of their common applications with the aim to give you a practical understanding allowing you to solve your own unique individual problems After reading this book you will be comfortable with the language and concepts involved with Genetic Algorithms and you ll have everything you need to start building your own Genetic Algorithms are frequently used to solve highly complex real world problems and with this book you too can harness their problem solving capabilities Understanding how to utilize and implement genetic algorithms is an essential tool in any respected software developers toolkit So step into this intriguing topic and learn how you too can improve your software with genetic algorithms and see real Java code at work which you can develop further for your own projects and research Guides you through the theory behind genetic algorithms Explains how genetic algorithms can be used for software developers trying to solve a range of problems Provides a step by step guide to implementing genetic in Java algorithms **Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2016**

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Automation Society Egypt Chapter The book's content is divided into four main sections Intelligent Language Processing Intelligent Systems Intelligent Robotics Systems and Informatics **Innovations in Smart Cities Applications Edition 2** Mohamed Ben Ahmed, Anouar Abdelhakim Boudhir, Ali Younes, 2019-02-06 This book highlights cutting edge research presented at the third installment of the International Conference on Smart City Applications SCA2018 held in T touan Morocco on October 10 11 2018 It presents original research results new ideas and practical lessons learned that touch on all aspects of smart city applications The respective papers share new and highly original results by leading experts on IoT Big Data and Cloud technologies and address a broad range of key challenges in smart cities including Smart Education and Intelligent Learning Systems Smart Healthcare Smart Building and Home Automation Smart Environment and Smart Agriculture Smart Economy and Digital Business and Information Technologies and Computer Science among others In addition various novel proposals regarding smart cities are discussed Gathering peer reviewed chapters written by prominent researchers from around the globe the book offers an invaluable instructional and research tool for courses on computer and urban sciences students and practitioners in computer science information science technology studies and urban management studies will find it particularly useful Further the book is an excellent reference guide for professionals and researchers working in mobility education governance energy the environment and computer sciences *Efficient Polymorphic Calls* Karel Driesen, 2012-12-06 The implementation of object oriented languages has been an active topic of research since the 1960s when the first Simula compiler was written The topic received renewed interest in the early 1980s with the growing popularity of object oriented programming languages such as c and Smalltalk and got another boost with the advent of Java Polymorphic calls are at the heart of object oriented languages and even the first implementation of Simula 67 contained their classic implementation via virtual function tables In fact virtual function tables predate even Simula for example Ivan Sutherland's Sketchpad drawing editor employed very similar structures in 1960 Similarly during the 1970s and 1980s the implementers of Smalltalk systems spent considerable efforts on implementing polymorphic calls for this dynamically typed language where virtual function tables could not be used Given this long history of research into the implementation of polymorphic calls and the relatively mature standing it achieved over time why one might ask should there be a new book in this field The answer is simple Both software and hardware have changed considerably in recent years to the point where many assumptions underlying the original work in this field are no longer true In particular virtual function tables are no longer sufficient to implement polymorphic calls even for statically typed languages for example Java's interface calls cannot be implemented this way Furthermore today's processors are deeply pipelined and can execute instructions out of order making it difficult to predict the execution time of even simple code sequences **PC AI.** ,1997 *Publisher's Monthly* ,1999 Conference Proceedings ,2001 26th Annual International Computer Software and Applications Conference IEEE Computer Society, 2002 Collects the 172 papers presented during the August 2002 conference with the

theme of Prolonging software life development and redevelopment The main subjects of the 38 sessions are component based software development software process quality control testing software evolution web based sy

**Applied Evolutionary Algorithms in Java** Robert Ghanea-Hercock, 2003-04-30 Genetic algorithms provide a powerful range of methods for solving complex engineering search and optimization algorithms Their power can also lead to difficulty for new researchers and students who wish to apply such evolution based methods Applied Evolutionary Algorithms in Java offers a practical hands on guide to applying such algorithms to engineering and scientific problems The concepts are illustrated through clear examples ranging from simple to more complex problems domains all based on real world industrial problems Examples are taken from image processing fuzzy logic control systems mobile robots and telecommunication network optimization problems The Java based toolkit provides an easy to use and essential visual interface with integrated graphing and analysis tools Topics and features inclusion of a complete Java toolkit for exploring evolutionary algorithms strong use of visualization techniques to increase understanding coverage of all major evolutionary algorithms in common usage broad range of industrially based example applications includes examples and an appendix based on fuzzy logic This book is intended for students researchers and professionals interested in using evolutionary algorithms in their work No mathematics beyond basic algebra and Cartesian graphs methods are required as the aim is to encourage applying the Java toolkit to develop the power of these techniques

**Science Citation Index**, 1992 Vols for 1964 have guides and journal lists **Introduction to Genetic Algorithms** S.N. Sivanandam, S. N. Deepa, 2007-10-24

The origin of evolutionary algorithms was an attempt to mimic some of the processes taking place in natural evolution Although the details of biological evolution are not completely understood even nowadays there exist some points supported by strong experimental evidence Evolution is a process operating over chromosomes rather than over organisms The former are organic tools encoding the structure of a living being i.e. a creature is built decoding a set of chromosomes Natural selection is the mechanism that relates chromosomes with the efficiency of the entity they represent thus allowing that efficient organism which is well adapted to the environment to reproduce more often than those which are not The evolutionary process takes place during the reproduction stage There exists a large number of reproductive mechanisms in Nature Most common ones are mutation that causes the chromosomes of offspring to be different to those of the parents and recombination that combines the chromosomes of the parents to produce the offspring Based upon the features above the three mentioned models of evolutionary computing were independently and almost simultaneously developed

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probability Pascal with random number generation for fortran basic and cobol programmers A simple genetic algorithm SGA in pascal A simple classifier system SCS in pascal Partition coefficient transforms for problem coding analysis     *Practical Genetic Algorithms* Randy L. Haupt,Sue Ellen Haupt,2004-07-16 This book deals with the fundamentals of genetic algorithms and their applications in a variety of different areas of engineering and science Most significant update to the second edition is the MATLAB codes that accompany the text Provides a thorough discussion of hybrid genetic algorithms Features more examples than first edition     *An Introduction To Genetic Algorithms For Scientists And Engineers* David Alexander Coley,1999-01-29 This invaluable book has been designed to be useful to most practising scientists and engineers whatever their field and however rusty their mathematics and programming might be The approach taken is largely practical with algorithms being presented in full and working code in BASIC FORTRAN PASCAL AND C included on a floppy disk to help the reader get up and running as quickly as possible The text could also be used as part of an undergraduate course on search and optimisation Student exercises are included at the end of several of the chapters many of which are computer based and designed to encourage exploration of the method     *Practical Handbook of Genetic Algorithms* Lance D. Chambers,2019-09-17 Practical Handbook of Genetic Algorithms Volume 3 Complex Coding Systems contains computer code examples for the development of genetic algorithm systems compiling them from an array of practitioners in the field Each contribution of this singular resource includes unique code segments documentation descripti     *Genetic Algorithms* Kim-Fung Man,Kit Sang TANG,Sam Kwong,2001-02-19 This comprehensive book gives a overview of the latest discussions in the application of genetic algorithms to solve engineering problems Featuring real world applications and an accompanying disk giving the reader the opportunity to use an interactive genetic algorithms demonstration program     **Genetic Algorithms and Engineering Optimization** Mitsuo Gen,Runwei Cheng,1999-12-28 A comprehensive guide to a powerful new analytical tool by two of its foremost innovators The past decade has witnessed many exciting advances in the use of genetic algorithms GAs to solve optimization problems in everything from product design to scheduling and client server networking Aided by GAs analysts and designers now routinely evolve solutions to complex combinatorial and multiobjective optimization problems with an ease and rapidity unthinkable with conventional methods Despite the continued growth and refinement of this powerful analytical tool there continues to be a lack of up to date guides to contemporary GA optimization principles and practices Written by two of the world s leading experts in the field this book fills that gap in the literature Taking an intuitive approach Mitsuo Gen and Runwei Cheng employ numerous illustrations and real world examples to help readers gain a thorough understanding of basic GA concepts including encoding adaptation and genetic optimizations and to show how GAs can be used to solve an array of constrained combinatorial multiobjective and fuzzy optimization problems Focusing on problems commonly encountered in industry especially in manufacturing Professors Gen and Cheng provide in depth coverage of advanced GA techniques for Reliability design Manufacturing cell design Scheduling Advanced

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**Genetic Algorithms + Data Structures = Evolution Programs** Zbigniew Michalewicz, 2013-03-09 Genetic algorithms are founded upon the principle of evolution i.e. survival of the fittest Hence evolution programming techniques based on genetic algorithms are applicable to many hard optimization problems such as optimization of functions with linear and nonlinear constraints the traveling salesman problem and problems of scheduling partitioning and control The importance of these techniques has been growing in the last decade since evolution programs are parallel in nature and parallelism is one of the most promising directions in computer science The book is self contained and the only prerequisite is basic undergraduate mathematics It is aimed at researchers practitioners and graduate students in computer science and artificial intelligence operations research and engineering This second edition includes several new sections and many references to recent developments A simple example of genetic code and an index are also added Writing an evolution program for a given problem should be an enjoyable experience this book may serve as a guide to this task

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