[PDF] The Smart Swarm How Understanding Flocks Schools And Colonies Can Make Us Better At Communicating Decision Making Getting Things Done Peter Miller

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The Smart Swarm - Peter Miller 2011 Draws on the examples of insect colonies and fish schools to demonstrate how ancient animal instincts surpass modern human developments in speed and productivity, revealing how numerous technological breakthroughs were inspired by natural organizations.

The Smart Swarm - Peter Miller 2010 Draws on the examples of insect colonies and fish schools to demonstrate how ancient animal instincts surpass modern human developments in speed and productivity, revealing how numerous technological breakthroughs were inspired by natural organizations.

Smart Swarm - Peter Miller 2011-04 How Understanding Flocks, Schools and Colonies Can Make Us Better at Communicating, Decision Making and Getting Things Done. The modern world may be obsessed with speed and productivity, but twenty-first century humans actually have much to learn from the ancient instincts of swarms. A fascinating new take on the concept of collective intelligence and its colourful manifestations in some of our most complex problems, Smart Swarm introduces a compelling new understanding of the real experts on solving our own complex problems relating to such topics as business, politics, and technology. Based on extensive globe-trotting research, this lively tour from National Geographic reporter Peter Miller introduces thriving throngs of ant colonies, which have inspired computer programs for streamlining factory processes, telephone networks, and truck routes; termites, used in recent studies for climate-control solutions; schools of fish, on which the U.S. military modelled a team of robots; and many other examples of the wisdom to be gleaned about the behaviour of crowds-among critters and corporations alike. In the tradition of James Surowiecki's The Wisdom of
Crowds and the innovative works of Malcolm Gladwell, Smart Swarm is an entertaining yet enlightening look at small-scale phenomena with big implications for us all.

**Swarm Intelligence** James Haywood Rolling, Jr. 2013-11-26 Companies and organizations everywhere cite creativity as the most desirable - and elusive - leadership quality of the future. Yet scores measuring creativity among American children have been on the wane for decades. A specialist in creative leadership, professor James Haywood Rolling, Jr. knows firsthand that the classroom is a key to either unlocking or blocking the critical imagination. He argues that today's schools, with their focus on rote learning and test-taking, work to stymie creativity, leaving children cut off from their natural impulses and boxed in by low expectations. Drawing on cutting-edge research in the realms of biological swarm theory, systems theory, and complexity theory, Rolling shows why group collaboration and adaptive social networking make us both smarter and more creative, and how we can design education and workplace practices around these natural principles, instead of pushing a limited focus on individual achievement that serves neither children nor their future colleagues, managers and mentors. The surprising truth is that the future will be pioneered by the collective problem-solvers, making Swarm Intelligence a must-read for business leaders, educators, and anyone else concerned with nurturing creative intelligence and innovative habits in today's youth.

**Swarm Intelligence** Eric Bonabeau 1999-09-23 Social insects--ants, bees, termites, and wasps--can be viewed as powerful problem-solving systems with sophisticated collective intelligence. Composed of simple interacting agents, this intelligence lies in the networks of interactions among individuals and between individuals and the environment. A fascinating subject, social insects are also a powerful metaphor for artificial intelligence, and the
problems they solve--finding food, dividing labor among nestmates, building nests, responding to external challenges--have important counterparts in engineering and computer science. This book provides a detailed look at models of social insect behavior and how to apply these models in the design of complex systems. The book shows how these models replace an emphasis on control, preprogramming, and centralization with designs featuring autonomy, emergence, and distributed functioning. These designs are proving immensely flexible and robust, able to adapt quickly to changing environments and to continue functioning even when individual elements fail. In particular, these designs are an exciting approach to the tremendous growth of complexity in software and information. Swarm Intelligence draws on up-to-date research from biology, neuroscience, artificial intelligence, robotics, operations research, and computer graphics, and each chapter is organized around a particular biological example, which is then used to develop an algorithm, a multiagent system, or a group of robots. The book will be an invaluable resource for a broad range of disciplines.

**Honeybee Democracy**-Thomas D. Seeley 2010-09-20 Honeybees make decisions collectively--and democratically. Every year, faced with the life-or-death problem of choosing and traveling to a new home, honeybees stake everything on a process that includes collective fact-finding, vigorous debate, and consensus building. In fact, as world-renowned animal behaviorist Thomas Seeley reveals, these incredible insects have much to teach us when it comes to collective wisdom and effective decision making. A remarkable and richly illustrated account of scientific discovery, Honeybee Democracy brings together, for the first time, decades of Seeley's pioneering research to tell the amazing story of house hunting and democratic debate among the honeybees. In the late spring and early summer, as a bee colony becomes overcrowded, a third of the hive stays behind and rears a new queen, while a swarm of thousands departs with the old queen to produce
a daughter colony. Seeley describes how these bees evaluate potential nest sites, advertise their discoveries to one another, engage in open deliberation, choose a final site, and navigate together—as a swirling cloud of bees—to their new home. Seeley investigates how evolution has honed the decision-making methods of honeybees over millions of years, and he considers similarities between the ways that bee swarms and primate brains process information. He concludes that what works well for bees can also work well for people: any decision-making group should consist of individuals with shared interests and mutual respect, a leader's influence should be minimized, debate should be relied upon, diverse solutions should be sought, and the majority should be counted on for a dependable resolution. An impressive exploration of animal behavior, Honeybee Democracy shows that decision-making groups, whether honeybee or human, can be smarter than even the smartest individuals in them.

The Perfect Swarm - Len Fisher 2011-03-08 The IgNobel Prize-winner and author of Rock, Paper, Scissors applies science-based solutions to seemingly complex problems in life.

Swarm Intelligence for Resource Management in Internet of Things - Aboul Ella Hassanien 2020-08-18 Internet of Things (IoT) is a new platform of various physical objects or "things equipped with sensors, electronics, smart devices, software, and network connections. IoT represents a new revolution of the Internet network which is driven by the recent advances of technologies such as sensor networks (wearable and implantable), mobile devices, networking, and cloud computing technologies. IoT permits these the smart devices to collect, store and analyze the collected data with limited storage and processing capacities. Swarm Intelligence for Resource Management in the Internet of Things presents a new approach in Artificial Intelligence that can be used for resources management in IoT, which is
considered a critical issue for this network. The authors demonstrate these resource management applications using swarm intelligence techniques. Currently, IoT can be used in many important applications which include healthcare, smart cities, smart homes, smart hospitals, environment monitoring, and video surveillance. IoT devices cannot perform complex on-site data processing due to their limited battery and processing. However, the major processing unit of an application can be transmitted to other nodes, which are more powerful in terms of storage and processing. By applying swarm intelligence algorithms for IoT devices, we can provide major advantages for energy saving in IoT devices. Swarm Intelligence for Resource Management in the Internet of Things shows the reader how to overcome the problems and challenges of creating and implementing swarm intelligence algorithms for each application. Examines the development and application of swarm intelligence systems in artificial intelligence as applied to the Internet of Things. Discusses intelligent techniques for the implementation of swarm intelligence in IoT Prepared for researchers and specialists who are interested in the use and integration of IoT and cloud computing technologies.

Swarm-Lauren Carter 2013-09-17 In a not-so-far-off future of diminished energy reserves and collapsing economies, thirty-seven-year-old Sandy Burch-Bailey lives a difficult existence. She survives by fishing, farming, and beekeeping in a small island community with her partner, Marvin, and their elderly and ill friend, Thompson. As they wait for an overdue supply ship to arrive with medicine for Thompson, vegetables go missing from their garden. A footprint in the soil leads Sandy to believe the thief is a homeless youngster. Childless and aching to be a mother, Sandy narrates her story to the child, reliving her life in a city plagued by power outages, unemployment, and violent protests. When the girl’s life is threatened, Sandy and Marvin must come together to protect both the child and their
fragile community. Told in two storylines divided by geography and time, Swarm is a suspenseful and powerful debut novel about survival and coming to terms with life’s regrettable choices.

In the Swarm—Byung-Chul Han 2017-04-07 A prominent German thinker argues that—contrary to “Twitter Revolution” cheerleading—digital communication is destroying political discourse and political action. The shitstorm represents an authentic phenomenon of digital communication. —from In the Swarm Digital communication and social media have taken over our lives. In this contrarian reflection on digitized life, Byung-Chul Han counters the cheerleaders for Twitter revolutions and Facebook activism by arguing that digital communication is in fact responsible for the disintegration of community and public space and is slowly eroding any possibility for real political action and meaningful political discourse. In the predigital, analog era, by the time an angry letter to the editor had been composed, mailed, and received, the immediate agitation had passed. Today, digital communication enables instantaneous, impulsive reaction, meant to express and stir up outrage on the spot. “The shitstorm,” writes Han, “represents an authentic phenomenon of digital communication.” Meanwhile, the public, the senders and receivers of these communications have become a digital swarm—not a mass, or a crowd, or Negri and Hardt’s antiquated notion of a “multitude,” but a set of isolated individuals incapable of forming a “we,” incapable of calling dominant power relations into question, incapable of formulating a future because of an obsession with the present. The digital swarm is a fragmented entity that can focus on individual persons only in order to make them an object of scandal. Han, one of the most widely read philosophers in Europe today, describes a society in which information has overrun thought, in which the same algorithms are employed by Facebook, the stock market, and the intelligence services. Democracy is under threat because digital communication has made freedom and
control indistinguishable. Big Brother has been succeeded by Big Data.

**The Human Swarm**-Mark W. Moffett
2019-04-16 The epic story and ultimate big history of how human society evolved from intimate chimp communities into the sprawling civilizations of a world-dominating species. If a chimpanzee ventures into the territory of a different group, it will almost certainly be killed. But a New Yorker can fly to Los Angeles--or Borneo--with very little fear. Psychologists have done little to explain this: for years, they have held that our biology puts a hard upper limit--about 150 people--on the size of our social groups. But human societies are in fact vastly larger. How do we manage--by and large--to get along with each other? In this paradigm-shattering book, biologist Mark W. Moffett draws on findings in psychology, sociology and anthropology to explain the social adaptations that bind societies. He explores how the tension between identity and anonymity defines how societies develop, function, and fail. Surpassing Guns, Germs, and Steel and Sapiens, The Human Swarm reveals how mankind created sprawling civilizations of unrivaled complexity--and what it will take to sustain them.

**Swarm Intelligence and Bio-Inspired Computation**-Xin-She Yang 2013-05-16 Swarm Intelligence and bio-inspired computation have become increasing popular in the last two decades. Bio-inspired algorithms such as ant colony algorithms, bat algorithms, bee algorithms, firefly algorithms, cuckoo search and particle swarm optimization have been applied in almost every area of science and engineering with a dramatic increase of number of relevant publications. This book reviews the latest developments in swarm intelligence and bio-inspired computation from both the theory and application side, providing a complete resource that analyzes and discusses the latest and future trends in research directions. It can help new researchers to carry out timely research and
inspire readers to develop new algorithms. With its impressive breadth and depth, this book will be useful for advanced undergraduate students, PhD students and lecturers in computer science, engineering and science as well as researchers and engineers. Focuses on the introduction and analysis of key algorithms Includes case studies for real-world applications Contains a balance of theory and applications, so readers who are interested in either algorithm or applications will all benefit from this timely book.

**Swarm Intelligence**-Aboul Ella Hassanien

2018-09-03 Swarm Intelligence: Principles, Advances, and Applications delivers in-depth coverage of bat, artificial fish swarm, firefly, cuckoo search, flower pollination, artificial bee colony, wolf search, and gray wolf optimization algorithms. The book begins with a brief introduction to mathematical optimization, addressing basic concepts related to swarm intelligence, such as randomness, random walks, and chaos theory. The text then: Describes the various swarm intelligence optimization methods, standardizing the variants, hybridizations, and algorithms whenever possible. Discusses variants that focus more on binary, discrete, constrained, adaptive, and chaotic versions of the swarm optimizers Depicts real-world applications of the individual optimizers, emphasizing variable selection and fitness function design. Details the similarities, differences, weaknesses, and strengths of each swarm optimization method. Draws parallels between the operators and searching manners of the different algorithms. Swarm Intelligence: Principles, Advances, and Applications presents a comprehensive treatment of modern swarm intelligence optimization methods, complete with illustrative examples and an extendable MATLAB® package for feature selection in wrapper mode applied on different data sets with benchmarking using different evaluation criteria. The book provides beginners with a solid foundation of swarm intelligence fundamentals, and offers experts valuable insight into new directions and hybridizations.
Adrian Mole: The Prostrate Years-Sue Townsend
2018-01-02
The final chapter in the beloved chronicles of an angsty Brit begun in The Secret Diary of Adrian Mole Aged 13¾ is “a tour de force by a comic genius” (Daily Mail). Am I turning into one of those middle-aged men who think the country has gone to the dogs and that there has been no decent music since Abba? Hard to believe! Adrian Mole is pushing forty, a beleaguered bookseller looking back through the wistful eyes of an unrecognized intellectual and, admittedly, pretty much of an Everyman. But he’s also looking forward, despite a few things: His five-year-old daughter is showing alarming Stalinist traits; his son is fighting the Taliban and he’s worried sick; his unfaithful wife is keeping a diary of her own and it’s all rather heartbreaking; frequent urination has made him fear trouble “down there;” and his mother is penning a misery memoir that is one gross slog of a lie (born an aristocrat in a Norfolk potato field, indeed!). Then one day he receives a phone call out of the blue from the great and only love of his life: Pandora Braithwaite. “Do you think of me?” she asks. Only ever since he was 13¾ . . .
Adrian Mole’s epic and hilarious chronicle of angst over a quarter century has sold more than twenty million copies worldwide, and been adapted for television and staged as a musical—truly “a phenomenon” (The Washington Post). This final volume is “like rediscovering an old school friend on Facebook” (Time Out), and “if [it] isn’t the best book published this year, I’ll eat my bookshelf” (Daily Mail).

The Wisdom of Crowds-James Surowiecki
2005-08-16
In this fascinating book, New Yorker business columnist James Surowiecki explores a deceptively simple idea: Large groups of people are smarter than an elite few, no matter how brilliant—better at solving problems, fostering innovation, coming to wise decisions, even predicting the future. With boundless erudition and in delightfully clear prose, Surowiecki ranges across fields as diverse as popular culture, psychology, ant biology, behavioral economics,
artificial intelligence, military history, and politics to show how this simple idea offers important lessons for how we live our lives, select our leaders, run our companies, and think about our world.

**Swarm Theory**-Christine Rice 2021-03-18 It was a time of hippies, heroin, and All in the Family. It was a time, in the small town of New Canaan—a fictional town in mid-Michigan—when developers gobbled up farmland and spit out subdivisions. Against this backdrop, Swarm Theory’s interlocking narratives reveal the troubled lives of Astrid (a young woman trying to hold her family together), Caroline (Astrid’s best friend who has lost her mother to heroin), Will (a soldier struggling to make sense of life after being discharged from the Marines), and Father Maurice Silver (a priest caring for a young man dying of AIDS). Nothing in New Canaan is quite what it seems. Swarm Theory is a book that reveals life’s amazing contradictions—the wonderful and the profane, devotion and infidelity, understanding and revenge—through stories told from different perspectives. These stories investigate what happens when people come together—whether to do admirable or horrific things. Here, intimates and strangers alike can’t help but be intertwined; their unpredictable journeys providing a backdrop for characters complex, honorable, and not. Swarm Theory reveals our often misguided, dark, and life-sustaining dependency on each other.

**Recent Advances in Swarm Intelligence and Evolutionary Computation**-Xin-She Yang 2014-12-27 This timely review volume summarizes the state-of-the-art developments in nature-inspired algorithms and applications with the emphasis on swarm intelligence and bio-inspired computation. Topics include the analysis and overview of swarm intelligence and evolutionary computation, hybrid metaheuristic algorithms, bat algorithm, discrete cuckoo search, firefly algorithm, particle swarm optimization, and harmony search as well as
convergent hybridization. Application case studies have focused on the dehydration of fruits and vegetables by the firefly algorithm and goal programming, feature selection by the binary flower pollination algorithm, job shop scheduling, single row facility layout optimization, training of feed-forward neural networks, damage and stiffness identification, synthesis of cross-ambiguity functions by the bat algorithm, web document clustering, truss analysis, water distribution networks, sustainable building designs and others. As a timely review, this book can serve as an ideal reference for graduates, lecturers, engineers and researchers in computer science, evolutionary computing, artificial intelligence, machine learning, computational intelligence, data mining, engineering optimization and designs.

**GPU-based Parallel Implementation of Swarm Intelligence Algorithms** - Ying Tan
2016-04-15

GPU-based Parallel Implementation of Swarm Intelligence Algorithms combines and covers two emerging areas attracting increased attention and applications: graphics processing units (GPUs) for general-purpose computing (GPGPU) and swarm intelligence. This book not only presents GPGPU in adequate detail, but also includes guidance on the appropriate implementation of swarm intelligence algorithms on the GPU platform. GPU-based implementations of several typical swarm intelligence algorithms such as PSO, FWA, GA, DE, and ACO are presented and having described the implementation details including parallel models, implementation considerations as well as performance metrics are discussed. Finally, several typical applications of GPU-based swarm intelligence algorithms are presented. This valuable reference book provides a unique perspective not possible by studying either GPGPU or swarm intelligence alone. This book gives a complete and whole picture for interested readers and new comers who will find many implementation algorithms in the book suitable for immediate use in their projects. Additionally, some algorithms can also be used as a starting
point for further research. Presents a concise but sufficient introduction to general-purpose GPU computing which can help the layman become familiar with this emerging computing technique. Describes implementation details, such as parallel models and performance metrics, so readers can easily utilize the techniques to accelerate their algorithmic programs. Appeals to readers from the domain of high performance computing (HPC) who will find the relatively young research domain of swarm intelligence very interesting. Includes many real-world applications, which can be of great help in deciding whether or not swarm intelligence algorithms or GPGPU is appropriate for the task at hand.

**Understanding Cryptography** - Christof Paar
2009-11-27

Cryptography is now ubiquitous - moving beyond the traditional environments, such as government communications and banking systems, we see cryptographic techniques realized in Web browsers, e-mail programs, cell phones, manufacturing systems, embedded software, smart buildings, cars, and even medical implants. Today's designers need a comprehensive understanding of applied cryptography. After an introduction to cryptography and data security, the authors explain the main techniques in modern cryptography, with chapters addressing stream ciphers, the Data Encryption Standard (DES) and 3DES, the Advanced Encryption Standard (AES), block ciphers, the RSA cryptosystem, public-key cryptosystems based on the discrete logarithm problem, elliptic-curve cryptography (ECC), digital signatures, hash functions, Message Authentication Codes (MACs), and methods for key establishment, including certificates and public-key infrastructure (PKI). Throughout the book, the authors focus on communicating the essentials and keeping the mathematics to a minimum, and they move quickly from explaining the foundations to describing practical implementations, including recent topics such as lightweight ciphers for RFIDs and mobile devices, and current key-length
recommendations. The authors have considerable experience teaching applied cryptography to engineering and computer science students and to professionals, and they make extensive use of examples, problems, and chapter reviews, while the book’s website offers slides, projects and links to further resources. This is a suitable textbook for graduate and advanced undergraduate courses and also for self-study by engineers.

Innovations and Developments of Swarm Intelligence Applications-Shi, Yuhui 2012-05-31 The natural social behavior of large groups of animals, such as flocks of birds, schools of fish, or colonies of ants has fascinated scientists for hundreds of years, if not longer, due to the intricate nature of their interactions and their ability to move and work together seemingly effortlessly. Innovations and Developments of Swarm Intelligence Applications explores the emerging realm of swarm intelligence, which finds its basis in the natural social behavior of animals. The study and application of this swarm behavior has led scientists to a new world of research as ways are found to apply this behavior to independent intelligent agents, creating complex solutions for real world applications. Worldwide contributions have been seamlessly combined in this comprehensive reference, providing a wealth of new information for researchers, academicians, students, and engineers.

Swarm Intelligence-Felix Chan 2007-12-01 In the era globalisation the emerging technologies are governing engineering industries to a multifaceted state. The escalating complexity has demanded researchers to find the possible ways of easing the solution of the problems. This has motivated the researchers to grasp ideas from the nature and implant it in the engineering sciences. This way of thinking led to emergence of many biologically inspired algorithms that have proven to be efficient in handling the computationally complex problems with
competence such as Genetic Algorithm (GA), Ant Colony Optimization (ACO), Particle Swarm Optimization (PSO), etc. Motivated by the capability of the biologically inspired algorithms the present book on "Swarm Intelligence: Focus on Ant and Particle Swarm Optimization" aims to present recent developments and applications concerning optimization with swarm intelligence techniques. The papers selected for this book comprise a cross-section of topics that reflect a variety of perspectives and disciplinary backgrounds. In addition to the introduction of new concepts of swarm intelligence, this book also presented some selected representative case studies covering power plant maintenance scheduling; geotechnical engineering; design and machining tolerances; layout problems; manufacturing process plan; job-shop scheduling; structural design; environmental dispatching problems; wireless communication; water distribution systems; multi-plant supply chain; fault diagnosis of airplane engines; and process scheduling. I believe these 27 chapters presented in this book adequately reflect these topics.

Swarm Intelligence and Evolutionary Algorithms in Healthcare and Drug Development

Sandeep Kumar 2019-11-11

Healthcare sector is characterized by difficulty, dynamism and variety. In 21st century, healthcare domain is surrounded by tons of challenges in terms of Disease detection, prevention, high costs, skilled technicians and better infrastructure. In order to handle these challenges, Intelligent Healthcare management technologies are required to play an effective role in improving patient’s life. Healthcare organizations also need to continuously discover useful and actionable knowledge to gain insight from tons of data for various purposes for saving lives, reducing medical operations errors, enhancing efficiency, reducing costs and making the whole world a healthy world. Applying Swarm Intelligence and Evolutionary Algorithms in Healthcare and Drug Development is essential nowadays. The objective of this book is to highlight various Swarm Intelligence and
Evolutionary Algorithms techniques for various medical issues in terms of Cancer Diagnosis, Brain Tumor, Diabetic Retinopathy, Heart disease as well as drug design and development. The book will act as one-stop reference for readers to think and explore Swarm Intelligence and Evolutionary Algorithms seriously for real-time patient diagnosis, as the book provides solutions to various complex diseases found critical for medical practitioners to diagnose in real-world. Key Features: Highlights the importance and applications of Swarm Intelligence and Evolutionary Algorithms in Healthcare industry. Elaborates Swarm Intelligence and Evolutionary Algorithms for Cancer Detection. In-depth coverage of computational methodologies, approaches and techniques based on Swarm Intelligence and Evolutionary Algorithms for detecting Brain Tumour including deep learning to optimize brain tumor diagnosis. Provides a strong foundation for Diabetic Retinopathy detection using Swarm and Evolutionary algorithms. Focuses on applying Swarm Intelligence and Evolutionary Algorithms for Heart Disease detection and diagnosis. Comprehensively covers the role of Swarm Intelligence and Evolutionary Algorithms for Drug Design and Discovery. The book will play a significant role for Researchers, Medical Practitioners, Healthcare Professionals and Industrial Healthcare Research and Development wings to conduct advanced research in Healthcare using Swarm Intelligence and Evolutionary Algorithms techniques.

Programming Collective Intelligence-Toby Segaran 2007-08-16 Want to tap the power behind search rankings, product recommendations, social bookmarking, and online matchmaking? This fascinating book demonstrates how you can build Web 2.0 applications to mine the enormous amount of data created by people on the Internet. With the sophisticated algorithms in this book, you can write smart programs to access interesting datasets from other web sites, collect data from users of your own applications, and analyze and
understand the data once you've found it. Programming Collective Intelligence takes you into the world of machine learning and statistics, and explains how to draw conclusions about user experience, marketing, personal tastes, and human behavior in general -- all from information that you and others collect every day. Each algorithm is described clearly and concisely with code that can immediately be used on your web site, blog, Wiki, or specialized application. This book explains: Collaborative filtering techniques that enable online retailers to recommend products or media Methods of clustering to detect groups of similar items in a large dataset Search engine features -- crawlers, indexers, query engines, and the PageRank algorithm Optimization algorithms that search millions of possible solutions to a problem and choose the best one Bayesian filtering, used in spam filters for classifying documents based on word types and other features Using decision trees not only to make predictions, but to model the way decisions are made Predicting numerical values rather than classifications to build price models Support vector machines to match people in online dating sites Non-negative matrix factorization to find the independent features in a dataset Evolving intelligence for problem solving -- how a computer develops its skill by improving its own code the more it plays a game Each chapter includes exercises for extending the algorithms to make them more powerful. Go beyond simple database-backed applications and put the wealth of Internet data to work for you. "Bravo! I cannot think of a better way for a developer to first learn these algorithms and methods, nor can I think of a better way for me (an old AI dog) to reinvigorate my knowledge of the details." -- Dan Russell, Google "Toby's book does a great job of breaking down the complex subject matter of machine-learning algorithms into practical, easy-to-understand examples that can be directly applied to analysis of social interaction across the Web today. If I had this book two years ago, it would have saved precious time going down some fruitless paths." -- Tim Wolters, CTO, Collective Intellect
Swarm Troopers - David Hambling 2015-12-10
Small unmanned aircraft are already transforming warfare, with hand-launched scouts like the Raven and lethal tactical drones like Switchblade already in use by US forces. A bigger revolution is on the way, as swarming software allows a single operator to control large numbers of drones, and smartphone technology means they can be built for $1,000 each -- by anybody, not just governments. This book looks at the history of drone warfare, the rise of big drones like the Predator and how they are being eclipsed by smaller unmanned aircraft. And how the future is being shaped by smartphone technology, swarm software, miniaturised munitions and energy-harvesting that allows small drones to fly forever. It also looks at why current air defence cannot stop the swarms, and what drone swarms will mean for the balance of power and future wars. This is the world of Swarm Troopers.

The Ardent Swarm - Yamen Manai 2021
From an award-winning Tunisian author comes a stirring allegory about a country in the aftermath of revolution and the power of a single quest. Sidi lives a hermetic life as a bee whisperer, tending to his beloved "girls" on the outskirts of the desolate North African village of Nawa. He wakes one morning to find that something has attacked one of his beehives, brutally killing every inhabitant. Heartbroken, he soon learns that a mysterious swarm of vicious hornets committed the mass murder--but where did they come from, and how can he stop them? If he is going to unravel this mystery and save his bees from annihilation, Sidi must venture out into the village and then brave the big city and beyond in search of answers. Along the way, he discovers a country and a people turned upside down by their new post-Arab Spring reality as Islamic fundamentalists seek to influence votes any way they can on the eve of the country's first democratic elections. To succeed in his quest, and find a glimmer of hope to protect all that he holds dear, Sidi will have to look further than he
ever imagined. In this brilliantly accessible modern-day parable, Yamen Manai uses a masterful blend of humor and drama to reveal what happens in a country shaken by revolutionary change after the world stops watching.

**Cosmic Impact**-Andrew May 2019-02-07 As end-of-the-world scenarios go, an apocalyptic collision with an asteroid or comet is the new kid on the block, gaining respectability only in the last decade of the 20th century with the realisation that the dinosaurs had been wiped out by just such an impact. Now the science community is making up for lost time, with worldwide efforts to track the thousands of potentially hazardous near-Earth objects, and plans for high-tech hardware that could deflect an incoming object from a collision course - a procedure depicted, with little regard for scientific accuracy, in several Hollywood movies. Astrophysicist and science writer Andrew May disentangles fact from fiction in this fast-moving and entertaining account, covering the nature and history of comets and asteroids, the reason why some orbits are more hazardous than others, the devastating local and global effects that an impact event would produce, and - more optimistically - the way future space missions could avert a catastrophe.

**Advances in Applied Artificial Intelligence**-Fulcher, John 2006-03-31 "This book explores artificial intelligence finding it cannot simply display the high-level behaviours of an expert but must exhibit some of the low level behaviours common to human existence"--Provided by publisher.

**Swarm of Bees**-Lemony Snicket 2019-04-23 From the bestselling author of The Dark comes another brilliantly illustrated picture book that takes on an intense childhood emotion--this time, anger--in a rollicking, kid-friendly way. Whether you're a kid or a bee, sometimes you feel so mad,
you buzz around looking for people to sting and trouble to make. See how one boy, a swarm of bees, and a whole town can get riled up and then find a way to feel better through the comfort of unconditional love and community. Printed in a brilliant palette of primary colors, brimming with beautiful dots and stripes, Rilla Alexander's art sings. Not since David Shannon's No, David! have readers been given the pleasure of witnessing such uproariously terrible behavior, unbridled emotion, and ultimately, such comfort.

**Swarm**

B. V. Larson 2011-07-08 A novel of military science fiction telling the story of Earth's annexation by an alien empire. Long considered a primitive people on a backwater planet, humanity finds itself in the middle of a war, and faced with extinction.

**Swarm Intelligence Algorithms (Two Volume Set)**

Adam Slowik 2021-01-26 Swarm intelligence algorithms are a form of nature-based optimization algorithms. Their main inspiration is the cooperative behavior of animals within specific communities. This can be described as simple behaviors of individuals along with the mechanisms for sharing knowledge between them, resulting in the complex behavior of the entire community. Examples of such behavior can be found in ant colonies, bee swarms, schools of fish or bird flocks. Swarm intelligence algorithms are used to solve difficult optimization problems for which there are no exact solving methods or the use of such methods is impossible, e.g. due to unacceptable computational time. This set comprises two volumes: Swarm Intelligence Algorithms: A Tutorial and Swarm Intelligence Algorithms: Modifications and Applications. The first volume thoroughly presents the basics of 24 algorithms selected from the entire family of swarm intelligence algorithms. It contains a detailed explanation of how each algorithm works, along with relevant program codes in Matlab and the C++ programming language, as well as numerical examples illustrating step-by-step...
step how individual algorithms work. The second volume describes selected modifications of these algorithms and presents their practical applications. This book presents 24 swarm algorithms together with their modifications and practical applications. Each chapter is devoted to one algorithm. It contains a short description along with a pseudo-code showing the various stages of its operation. In addition, each chapter contains a description of selected modifications of the algorithm and shows how it can be used to solve a selected practical problem.

Mastering Ethereum - Andreas M. Antonopoulos
2018-11-13 Ethereum represents the gateway to a worldwide, decentralized computing paradigm. This platform enables you to run decentralized applications (DApps) and smart contracts that have no central points of failure or control, integrate with a payment network, and operate on an open blockchain. With this practical guide, Andreas M. Antonopoulos and Gavin Wood provide everything you need to know about building smart contracts and DApps on Ethereum and other virtual-machine blockchains. Discover why IBM, Microsoft, NASDAQ, and hundreds of other organizations are experimenting with Ethereum. This essential guide shows you how to develop the skills necessary to be an innovator in this growing and exciting new industry. Run an Ethereum client, create and transmit basic transactions, and program smart contracts Learn the essentials of public key cryptography, hashes, and digital signatures Understand how "wallets" hold digital keys that control funds and smart contracts Interact with Ethereum clients programmatically using JavaScript libraries and Remote Procedure Call interfaces Learn security best practices, design patterns, and anti-patterns with real-world examples Create tokens that represent assets, shares, votes, or access control rights Build decentralized applications using multiple peer-to-peer (P2P) components

You Can Choose to be Happy - Tom G. Stevens
PhD 2010 Dr. Stevens' research identifies
specific learnable beliefs and skills—not general, inherited traits—that cause people to be happy and successful.

**Handbook of Research on Smart Computing for Renewable Energy and Agro-Engineering**—Kharchenko, Valeriy 2019-12-06

The rise in population and the concurrently growing consumption rate necessitates the evolution of agriculture to adopt current computational technologies to increase production at a faster and smoother scale. While existing technologies may help in crop processing, there is a need for studies that seek to understand how modern approaches like artificial intelligence, fuzzy logic, and hybrid algorithms can aid the agricultural process while utilizing energy sources efficiently. The Handbook of Research on Smart Computing for Renewable Energy and Agro-Engineering is an essential publication that examines the benefits and barriers of implementing computational models to agricultural production and energy sources as well as how these models can produce more cost-effective and sustainable solutions. Featuring coverage on a wide range of topics such as bacterial foraging, swarm intelligence, and combinatorial optimization, this book is ideally designed for agricultural engineers, farmers, municipal union leaders, computer scientists, information technologists, sustainable developers, managers, environmentalists, industry professionals, academicians, researchers, and students.

**The Culture Code**—Daniel Coyle 2018

"Coyle spent three years researching the question of what makes a successful group tick, visiting some of the world's most productive groups—including Pixar, Navy SEALs, Zappos, IDEO, and the San Antonio Spurs. Coyle discovered that high-performing groups ... generate three key messages that enable them to excel: 1. Safety (we are connected), 2. Shared risk (we are vulnerable together), 3. Purpose (we are part of the same story)"—
Nature-inspired Methods for Stochastic, Robust and Dynamic Optimization-Javier Del Ser Lorente 2018-07-18 Nature-inspired algorithms have a great popularity in the current scientific community, being the focused scope of many research contributions in the literature year by year. The rationale behind the acquired momentum by this broad family of methods lies on their outstanding performance evinced in hundreds of research fields and problem instances. This book gravitates on the development of nature-inspired methods and their application to stochastic, dynamic and robust optimization. Topics covered by this book include the design and development of evolutionary algorithms, bio-inspired metaheuristics, or memetic methods, with empirical, innovative findings when used in different subfields of mathematical optimization, such as stochastic, dynamic, multimodal and robust optimization, as well as noisy optimization and dynamic and constraint satisfaction problems.

Lords of the Seventh Swarm-Dave Wolverton 1998-01-05 In the far future, insectoid Dronons have invaded human worlds and threaten to destroy humanity, but when Maggie Flynn, the Dronon's Golden Queen, halts the invasion, they must kill her and her companions, careening across the universe and hiding on remote planets. Reprint.

Smart Swarm: Using Animal Behaviour to Organise Our World-Peter Miller 2010-08-05 How Understanding Flocks, Schools and Colonies Can Make Us Better at Communicating, Decision Making and Getting Things Done.

Particle Swarm Optimization with Applications-Pakize Erdogmus 2018-05-30 This book is intended to gather recent studies on particle swarm optimization (PSO). In this book,
readers can find the recent theoretical developments and applications on PSO algorithm. From the theoretical aspect, PSO has preserved its popularity because of the fast convergence rate, and a lot of hybrid algorithms have recently been developed in order to increase the performance of the algorithm. At the same time, PSO has also been used to solve different kinds of engineering optimization problems. In this book, a reader can find engineering applications of PSO, such as environmental economic dispatch and grid computing.


**AN Optimist's Tour of the Future**-Mark Stevenson 2011-02-03 In the tradition of Bill Bryson's A Short History of Nearly Everything, a smart and entertaining guide to the future of civilization When unexpectedly confronted with his own mortality, Mark Stevenson—a writer, deep-thinker, and stand-up comedian—began to ponder what the future holds for our species. "The past is a foreign country," writes Stevenson. "By my analysis it's a bit like France—in that I've been to parts of it and eaten some nice food there. But the future? The future is an unknown territory—and there isn't a guidebook." Thus, his ambition was born. Stevenson set out simply, asking, "What's next?" and then traveled the globe in pursuit of the answers. Along the way, he visited the Australian outback to visit the farmers who can save us from climate change, met a robot with mood swings, and talked to the Spaniard who's putting a hotel in space. While some might be overwhelmed, or even dismayed by the looming realities of genome sequencing, synthetic biology, a nuclear renaissance, and carbon scrubbing, Stevenson remains, well, optimistic. Drawing on his singular humor and storytelling to break down these sometimes complicated discoveries, An Optimist's Tour of
the Future paints a wonderfully readable, and completely enthralling portrait of where we'll be when we grow up- and why it's not so scary.
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