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ED9 - EDWARDS BENITEZ

This book constitutes the refereed proceedings of the 5th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2001, held in Hong Kong, China in April 2001. The 38 revised full papers and 22 short papers presented were carefully reviewed and selected from a total of 152 submissions. The book offers topical sections on Web mining, text mining, applications and tools, concept hierarchies, feature selection, interestingness, sequence mining, spatial and temporal mining, association mining, classification and rule induction, clustering, and advanced topics and new methods.

In this must-have for anyone who wants to better understand their love life, a mathematician pulls back the curtain and reveals the hidden patterns—from dating sites to divorce, sex to marriage—behind the rituals of love. The roller coaster of romance is hard to quantify; defining how lovers might feel from a set of simple equations is impossible. But that doesn't mean that mathematics isn't a crucial tool for understanding love. Love, like most things in life, is full of patterns. And mathematics is ultimately the study of patterns—from predicting the weather to the fluctuations of the stock market, the movement of planets or the growth of cities. These patterns twist and turn and warp and evolve just as the rituals of love do. In The Mathematics of Love, Dr. Hannah Fry takes the reader on a fascinating journey through the patterns that define our love lives, applying mathematical formulas to the most common yet complex questions pertaining to love: What's the chance of finding love? What's the probability that it will last? How do online dating algorithms work, exactly? Can game theory help us decide who to approach in a bar? At what point in your dating life should you settle down? From evaluating the best strategies for online dating to defining the nebulous concept of beauty, Dr. Fry proves—with great insight, wit, and fun—that math is a surprisingly useful tool to negotiate the complicated, often baffling, sometimes infuriating, always interesting, mysteries of love.

A classic of stitchwork, The Complete Book of Crochet Stitch Designs has now been updated with all-new diagrams and full-color photography, and showcases 500 designs—from traditional favorites to originals found nowhere else. There are soft and lacy patterns; some that mimic knitting, weaving, or patchwork; and others that use large openwork and popcorn stitches. And every stitch design features a photo, reader-friendly instructions, and a diagram showing each stitch and its placement—so it's easy to understand the entire design at a glance. The guide also includes a pictorial index, which displays the complete pattern, and directions for all basic crochet stitches. Both beginners and experienced crocheters alike will turn to this invaluable reference for years to come.A Main Selection of the Crafter's Choice Book Club.

KI 2008 was the 31st Annual German Conference on Arti?cial Intelligence held September 23–26 at the University of Kaiserslautern and the German Research Center for Arti?cial Intelligence DFKI GmbH in Kaiserslautern, Germany. The conference series started in 1975 with the German Workshop on AI (GWAI), which took place in Bonn, and represents the ?rst forum of its type for the German AI Community. Over the years AI has become a major ?eld in c- puter scienceinGermanyinvolvinga numberof successful-projects thatreceived much international attention. Today KI conferences are international forums where participants from academia and industry from all over the world meet to exchange their recent research results and to discuss trends in the ?eld. Since 1993 the meeting has been called the "Annual German Conference on Arti?cial Intelligence," designated by the German acronym KI. This volume contains the papers selected out of 77 submissions, including a number of submissions from outside German-speaking countries. In total, 15 submissions (19%) were accepted for oral and 30 (39%) for poster presentation. Oralpresen-tationsattheconferenceweresingletrack. Becauseofthis,thechoice of presentation form (oral, poster) was based on how well reviews indicated that the paper would ?t into one or the other format. The proceedings allocate the same space to both types of papers. In addition, we selected six papers that show high application potential - scribing systems or prototypical implementations of innovative AI technologies. They are also included in this volume as two-page extended abstracts.

This book constitutes the refereed proceedings of the Workshop on Web Mining, WebMine 2006, held in Berlin, Germany, September 2006. Topics included are data mining based on analysis of bloggers and tagging, web mining, XML mining and further techniques of knowledge discovery. The book is especially valuable for those interested in the aspects of Web 2.0 and its inherent dynamic and diversity of user-generated content.

How patterns--from diagrams of spacetime to particle trails re-

vealed by supercolliders--offer clues to the fundamental workings of the physical world. Our universe might appear chaotic, but deep down it's simply a myriad of rules working independently to create patterns of action, force, and consequence. In Ten Patterns That Explain the Universe, Brian Clegg explores the phenomena that make up the very fabric of our world by examining ten essential sequenced systems. From diagrams that show the deep relationships between space and time to the quantum behaviors that rule the way that matter and light interact, Clegg shows how these patterns provide a unique view of the physical world and its fundamental workings. Guiding readers on a tour of our world and the universe beyond, Clegg describes the cosmic microwave background, sometimes called the "echo of the big bang," and how it offers clues to the universe's beginnings; the diagrams that illustrate Einstein's revelation of the intertwined nature of space and time; the particle trail patterns revealed by the Large Hadron Collider and other accelerators; and the simple-looking patterns that predict quantum behavior (and decorated Richard Feynman's van). Clegg explains how the periodic table reflects the underlying pattern of the configuration of atoms, discusses the power of the number line, demonstrates the explanatory uses of tree diagrams, and more.

An astrophysicist offers an introduction to the theoretical principles, practical applications, and far-reaching implications of quantum physics and quantum mechanics

This volume contains the proceedings of the Fifth International Conference on Database Systems for Advanced Applications (DASFAA '97). DASFAA '97 focused on advanced database technologies and their applications. The 55 papers in this volume cover a wide range of areas in the field of database systems and applications ? including the rapidly emerging areas of the Internet, multimedia, and document database systems ? and should be of great interest to all database system researchers and developers, and practitioners.

With Learning JavaScript Design Patterns, you'll learn how to write beautiful, structured, and maintainable JavaScript by applying classical and modern design patterns to the language. If you want to keep your code efficient, more manageable, and up-to-date with the latest best practices, this book is for you. Explore many popular design patterns, including Modules, Observers, Facades, and Mediators. Learn how modern architectural patterns—such as MVC, MVP, and MVVM—are useful from the perspective of a modern web application developer. This book also walks experienced JavaScript developers through modern module formats, how to namespace code effectively, and other essential topics. Learn the structure of design patterns and how they are written Understand different pattern categories, including creational, structural, and behavioral Walk through more than 20 classical and modern design patterns in JavaScript Use several options for writing modular code—including the Module pattern, Asyncronous Module Definition (AMD), and CommonJS Discover design patterns implemented in the jQuery library Learn popular design patterns for writing maintainable jQuery plug-ins "This book should be in every JavaScript developer's hands. It's the go-to book on JavaScript patterns that will be read and referenced many times in the future."—Andrée Hansson, Lead Front-End Developer, presis!

From dainty ginghams to supersized buffalo checks, the classic check motif is everywhere you look. Now, you can look no further than your own home as you include patchwork checks in your quilts! Fabric and quilt designer Corey Yoder shows you just how fun and easy it is to incorporate this versatile element into quilts. Start with basic strip piecing--sewing your own checks is as easy as making Nine Patches! Then use the versatile checks as block centers, let them make a statement on their own, or join them into a pieced border. No matter the season, with eight generous--sized lap quilt patterns, you're sure to find a pattern that's a perfect accent for your home, whether your style is modern or farmhouse, cottage or traditional.

What people are saying about Search Patterns "Search Patterns is a delight to read -- very thoughtful and thought provoking. It's the most comprehensive survey of designing effective search experiences I've seen." --Irene Au, Director of User Experience, Google "I love this book! Thanks to Peter and Jeffery, I now know that search (yes, boring old yucky who cares search) is one of the coolest ways around of looking at the world." --Dan Roam, author, The Back of the Napkin (Portfolio Hardcover) "Search Patterns is a playful guide to the practical concerns of search interface design. It contains a bonanza of screenshots and illustrations that capture the best of today's design practices and presents a fresh perspective on the broader role of search and discovery." --Marti Hearst, Professor, UC Berkeley and author, Search User Interfaces (Cambridge University Press) "It's not often I come across a book that

asks profound questions about a fundamental human activity, and then proceeds to answer those questions with practical observations and suggestions. Search Patterns is an expedition into the heart of the web and human cognition, and for me it was a delightful journey that delivered scores of insights." --Dave Gray, Founder and Chairman, XPLANE "Search is swiftly transforming everything we know, yet people don't understand how mavens design search: by stacking breadcrumbs, scenting widgets, and keeping eyeballs on the engine. I urge you to put your eyeballs on this unique and important book." --Bruce Sterling, Writer, Futurist, and Co-Founder, The Electronic Frontier Foundation "As one who searches a lot (and often ends up frustrated), Search Patterns is a revelation." --Nigel Holmes, Designer, Theorist, and Principal, Explanation Graphics "Search Patterns is a fabulous must-have book! Inside, you'll learn the whys and wheres of practically every modern search design trick and technique." --Jared Spool, CEO and Founder, User Interface Engineering Search is among the most disruptive innovations of our time. It influences what we buy and where we go. It shapes how we learn and what we believe. In this provocative and inspiring book, you'll explore design patterns that apply across the categories of web, ecommerce, enterprise, desktop, mobile, social, and real-time search and discovery. Filled with colorful illustrations and examples, Search Patterns brings modern information retrieval to life, covering such diverse topics as relevance, faceted navigation, multi-touch, personalization, visualization, multi-sensory search, and augmented reality. By drawing on their own experience-as well as best practices and evidence-based research-the authors not only offer a practical guide to help you build effective search applications, they also challenge you to imagine the future of discovery. You'll find Search Patterns intriguing and invaluable, whether you're a web practitioner, mobile designer, search entrepreneur, or just interested in the topic. Discover a pattern language for search that embraces user psychology and behavior, information architecture, interaction design, and emerging technology Boost enterprise efficiency and e-commerce sales Enable mobile users to achieve goals, complete tasks, and find what they need Drive design innovation for search interfaces and applications

This book is for developers who already know how to use Solr and are looking at procuring advanced strategies for improving their search using Solr. This book is also for people who work with analytics to generate graphs and reports using Solr. Moreover, if you are a search architect who is looking forward to scale your search using Solr, this is a must have book for you. It would be helpful if you are familiar with the Java programming language.

Science, engineering, and technology permeate nearly every facet of modern life and hold the key to solving many of humanity's most pressing current and future challenges. The United States' position in the global economy is declining, in part because U.S. workers lack fundamental knowledge in these fields. To address the critical issues of U.S. competitiveness and to better prepare the workforce, A Framework for K-12 Science Education proposes a new approach to K-12 science education that will capture students' interest and provide them with the necessary foundational knowledge in the field. A Framework for K-12 Science Education outlines a broad set of expectations for students in science and engineering in grades K-12. These expectations will inform the development of new standards for K-12 science education and, subsequently, revisions to curriculum, instruction, assessment, and professional development for educators. This book identifies three dimensions that convey the core ideas and practices around which science and engineering education in these grades should be built. These three dimensions are: crosscutting concepts that unify the study of science through their common application across science and engineering; scientific and engineering practices; and disciplinary core ideas in the physical sciences, life sciences, and earth and space sciences and for engineering, technology, and the applications of science. The overarching goal is for all high school graduates to have sufficient knowledge of science and engineering to engage in public discussions on science-related issues, be careful consumers of scientific and technical information, and enter the careers of their choice. A Framework for K-12 Science Education is the first step in a process that can inform state-level decisions and achieve a research-grounded basis for improving science instruction and learning across the country. The book will guide standards developers, teachers, curriculum designers, assessment developers, state and district science administrators, and educators who teach science in informal environments.

Examining the science behind everyday predictions—such as why the supermarket sends particular coupons to the appropriate people and how a bank can foretell if someone will default on a loan

within a few minutes—this guide explains the basics of what data mining is, details a variety of data mining and techniques, and profiles the key figures behind the data-mining process. After first demonstrating fundamental approaches such as nearest neighbor and association rules, the resource goes on to analyze probabilistic techniques that use Bayes' theorem and artificial intelligence algorithms using neural networks. With chapters on a wide range of topics—from calculating similarity to dealing with uncertainty and modeling the brain—this comprehensive volume reveals how anyone with enough information can get an intimate view of someone's life and what to do about it.

Look around you and discover nature's incredible patterns Branching, spiraling, spinning--you can find patterns almost anywhere in nature, if you look for them. This book is a starting point that introduces kids to some major patterns in the natural world. Just as the branches of a tree spread upwards into the sky, roots branch deep into the ground. Branches also spread through our bodies, inside our lungs and veins. Storms and snail shells spiral; electrons and galaxies spin. With brief text and full-spread illustrations, this book is designed to inspire kids to observe, discover, and explore hidden structures and shapes in the natural world around them. Why are things the way they are? This question, key to scientific inquiry, runs throughout the text. Artwork in multilayered screen prints shows how the natural world is inherently beautiful, from the curve of your ear to the spiraling arms of our galaxy. Kids will come away with new STEM knowledge and a deeper understanding that we are all connected to nature and part of its patterns.

Professionals who use multimedia documents as a tool to communicate concepts will find this a hugely illuminating text. It provides a comprehensive and up to date account of relevant research issues, methodologies and results in the area of multimedia comprehension. More specifically, the book draws connections between cognitive research, instructional strategies and design methodologies. It includes theoretical reviews, discussions of research techniques, ad original experimental contributions. The book highlights essential aspects of current theories, and trends for future research on the use of multimedia documents.

Save time and trouble when using Scala to build object-oriented, functional, and concurrent applications. With more than 250 ready-to-use recipes and 700 code examples, this comprehensive cookbook covers the most common problems you'll encounter when using the Scala language, libraries, and tools. It's ideal not only for experienced Scala developers, but also for programmers learning to use this JVM language. Author Alvin Alexander (creator of DevDaily.com) provides solutions based on his experience using Scala for highly scalable, component-based applications that support concurrency and distribution. Packed with real-world scenarios, this book provides recipes for: Strings, numeric types, and control structures Classes, methods, objects, traits, and packaging Functional programming in a variety of situations Collections covering Scala's wealth of classes and methods Concurrency, using the Akka Actors library Using the Scala REPL and the Simple Build Tool (SBT) Web services on both the client and server sides Interacting with SQL and NoSQL databases Best practices in Scala development

Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis Program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose, code, and results

* Allen Holub is a highly regarded instructor for the University of California, Berkeley, Extension. He has taught since 1982 on various topics, including Object-Oriented Analysis and Design, Java, C++, C. Holub will use this book in his Berkeley Extension classes. * Holub is a regular presenter at the Software Development conferences and is Contributing Editor for the online magazine Java-World, for whom he writes the Java Toolbox. He also wrote the OO Design Process column for IBM DeveloperWorks. * This book is not time-sensitive. It is an extremely well-thought out approach to learning design patterns, with Java as the example platform, but the concepts presented are not limited to just Java programmers. This is a complement to the Addison-Wesley seminal "Design Patterns" book by the "Gang of Four".

The way developers design, build, and run software has changed significantly with the evolution of microservices and containers. These modern architectures use new primitives that require a different set of practices than most developers, tech leads, and architects are accustomed to. With this focused guide, Bilgin Ibryam

and Roland Huß from Red Hat provide common reusable elements, patterns, principles, and practices for designing and implementing cloud-native applications on Kubernetes. Each pattern includes a description of the problem and a proposed solution with Kubernetes specifics. Many patterns are also backed by concrete code examples. This book is ideal for developers already familiar with basic Kubernetes concepts who want to learn common cloud native patterns. You'll learn about the following pattern categories: Foundational patterns cover the core principles and practices for building container-based cloud-native applications. Behavioral patterns explore finer-grained concepts for managing various types of container and platform interactions. Structural patterns help you organize containers within a pod, the atom of the Kubernetes platform. Configuration patterns provide insight into how application configurations can be handled in Kubernetes. Advanced patterns covers more advanced topics such as extending the platform with operators.

The Burrows-Wheeler Transform is one of the best lossless compression me- ods available. It is an intriguing — even puzzling — approach to squeezing redundancy out of data, it has an interesting history, and it has applications well beyond its original purpose as a compression method. It is a relatively late addition to the compression canon, and hence our motivation to write this book, looking at the method in detail, bringing together the threads that led to its discovery and development, and speculating on what future ideas might grow out of it. The book is aimed at a wide audience, ranging from those interested in learning a little more than the short descriptions of the BWT given in st- dard texts, through to those whose research is building on what we know about compression and pattern matching. The ?rst few chapters are a careful description suitable for readers with an elementary computer science ba- ground (and these chapters have been used in undergraduate courses), but later chapters collect a wide range of detailed developments, some of which are built on advanced concepts from a range of computer science topics (for example, some of the advanced material has been used in a grad-uate c- puter science course in string algorithms). Some of the later explanations require some mathematical sophistication, but most should be accessible to those with a broad background in computer science.

A user-friendly guide that shows you how to personalize your favorite sewing patterns to fit your own unique and individual body. Have you learned your colors and shapes? Now it's time to learn patterns! Stripes, polka dots, plaid, chevron, and more are featured in this first-ever patterns concept book that provides readers with the vocabulary to name what they see in the world around them. The ten most prevalent patterns are presented first as a single element (This is a circle ...), then as a pattern (... a lot of circles make polka dots!). Conceived by educators and illustrated in vivid candy-colored hues, this pitch-perfect introduction to patterns will engage the artistic, mathematical, and linguistic parts of every young child's mind.

This is a photographic journey of discovery. We are going to look for patterns in nature and try to discover the underlying forces that produce them. My goal for this project is to keep it simple, thought provoking and FUN! Take a hike in the woods, visit a National Park or the City Park near your home and have fun discovering these patterns! If you see similar patterns here and there - that's a clue! That's a clue that there are underlying physical principles at work!

"It appears to us that the universe is structured in a deeply mathematical way. Falling bodies fall with predictable accelerations. Eclipses can be accurately forecast centuries in advance. Nuclear power plants generate electricity according to well-known formulas. But those examples are the tip of the iceberg. In Nature's Numbers, Ian Stewart presents many more, each charming in its own way.. Stewart admirably captures compelling and accessible mathematical ideas along with the pleasure of thinking of them. He writes with clarity and precision. Those who enjoy this sort of thing will love this book."—Los Angeles Times

Encompassing a broad range of forms and sources of data, this textbook introduces data systems through a progressive presentation. Introduction to Data Systems covers data acquisition starting with local files, then progresses to data acquired from relational databases, from REST APIs and through web scraping. It teaches data forms/formats from tidy data to relationally defined sets of tables to hierarchical structure like XML and JSON using data models to convey the structure, operations, and constraints of each data form. The starting point of the book is a foundation in Python programming found in introductory computer science classes or short courses on the language, and so does not require prerequisites of data structures, algorithms, or other courses. This makes the material accessible to students early in their educational career and equips them with understanding and skills that can be applied in computer science, data science/data analytics, and information technology programs as well as for internships and research experiences. This book is accessible to a wide variety of students. By drawing together content normally spread across upper level computer science courses, it offers a single source providing the essentials for data science practitioners. In our increasingly data-centric world, students from all domains will benefit

from the "data-aptitude" built by the material in this book.

Have you ever wondered how we know what we know? The Pattern Paradigm looks beneath the surface of what passes for truth and presents a new way of understanding. It tells the story of how knowledge is achieved; starting from the basics and progressing to the pyramid of patterns which lie at the heart of thinking. It describes how the pattern paradigm is superior to the status quo paradigm that pervades much of philosophy today. It is able to do this because it is a paradigm of great simplicity and great power. It opens up a new and more accurate way of understanding. It provides the missing link between sense-data and knowledge. It provides new insights into old problems which are not only amazing but also robust and self consistent. It is a book for both keen philosophers and for anyone else interested in philosophy, as it is easy to read and written in layman's terms. If you only ever read one book on philosophy, make it this one. This is a work of genius.'- J. E. Shearer.

From tiny seeds to green leaves to blooming buds, plants have all kinds of patterns. Can you find patterns in tulip fields, cactus needles, and dandelion seeds? Check out Plant Patterns and see what patterns sprout up!

When you're under pressure to produce a well designed, easy-to--navigate mobile app, there's no time to reinvent the wheel. This concise book provides a handy reference to 70 mobile app design patterns, illustrated by more than 400 screenshots from current iOS, Android, BlackBerry, WebOS, Windows Mobile, and Symbian apps. User experience professional Theresa Neil (Designing Web Interfaces) walks you through design patterns in 10 separate categories, including anti-patterns. Whether you're designing a simple iPhone application or one that's meant to work for every popular mobile OS on the market.

Offers the first overarching history of the humanities from Antiquity to the present.

A visual delight, and a designer's dream--the decorative details of great European paintings transformed into beautiful two-dimensional patterns Richly embroidered robes. Intricate lace collars. Elaborately laid floor tiles. Delicately carved and modeled cornices and capitals. These are among the details of decorative art that the Old Masters lovingly rendered in their paintings, to establish a setting, convey a portrait subject's social status, or sometimes just enliven a scene. Together these details--so easy to overlook in the imposing harmony of draftsmanship, color, and composition that makes up a great painting--form a veritable history of ornament. This inventive book plucks these decorative motifs from the background of paintings by masters like Bronzino, Fra Angelico and Jacques-Louis David, and transforms them into vibrant two-dimensional patterns. Seeing these patterns side-by-side with the original paintings deepens our appreciation of both. Patterns in Art will be a resource for graphic designers, and a revelation for all art lovers.

Mathematics as a Science of Patterns expounds a system of ideas about the nature of mathematics which Michael Resnik has been elaborating for a number of years. In calling mathematics a science he implies that it has a factual subject-matter and that mathematical knowledge is on a par with other scientific knowledge; in calling it a science of patterns he expresses his commitment to a structuralist philosophy of mathematics. He links this to a defence of realism about the metaphysics of mathematics--the view that mathematics is about things that really exist.

MOVING FROM A "BLUEPRINT HERMENEUTIC" TO A THEOLOGICAL ONE In this book, John Mark Hicks tells the story of his own hermeneutical journey in reading the Bible. Lovingly and graciously, he describes his transition from a "blueprint hermeneutic" to a theological one. Some suggest that moving away from a patternistic command-example-and-necessary-inference approach for understanding what God requires leaves no other alternative, or at least none that both respects biblical authority and seeks to obey the gospel of Jesus the Messiah. In Searching for the Pattern, John Mark offers just such an alternative. His theological hermeneutic is deeply rooted in the way the Bible presents itself as a dramatic history of God's plan to redeem the world as well as his own experience of growing up among Churches of Christ. Seeing the gospel of Jesus as the center of the biblical drama reorients us to what provides our Christian identity and unites us as disciples of Jesus. ********** I pray this book is received with open hearts and open minds because I believe this work could go a long way in helping to bring unity to our fractured fellowship. --Wes McAdams, Preaching Minister for the church of Christ on McDermott Road, Plano, Texas This excellent book helps us understand the inner workings of Bible interpretation among Churches of Christ and provides a persuasive proposal for Bible interpretation that is built on the story of God we find in Scripture--a story into which God calls us. --- James L. Gorman, Associate Professor of History, Johnson University Knoxville, Tennessee Finally, a trellis across the chasm! Throughout this book, Hicks does not compromise his high regard for both the church and the Scriptures; and through the grace found therein, he composes this urgent invitation back to the Table, where obedience cooperates with mystery, and we--estranged or conflicted--can find our place as one within God's magnificent story. --Tiffany Mangan Dahlman, Minister at Courtyard Church of Christ, Fayetteville, North Carolina John Mark Hicks is

Professor of Theology at Lipscomb University in Nashville, Tennessee. He has taught for thirty-eight years in schools associated with the Churches of Christ. He has published fifteen books and lectured in twenty countries and forty states and is married to Jennifer. They share six children and six grandchildren.

The acclaimed science writer "curates a visually striking, riotously colorful photographic display…of physical patterns in the natural world" (Publishers Weekly, starred review). Though at first glance the natural world may appear overwhelming in its diversity and complexity, there are regularities running through it, from the hexagons of a honeycomb to the spirals of a seashell and the branching veins of a leaf. Revealing the order at the foundation of the seemingly chaotic natural world, Patterns in Nature explores not only the math and science but also the beauty and artistry behind nature's awe-inspiring designs. Unlike the patterns we create, natural patterns are formed spontaneously from the forces that act in the physical world. Very often the same types of pattern and form—such as spirals, stripes, branches, and fractals—recur in places that seem to have nothing in common, as when the markings of a zebra mimic the ripples in windblown sand. But many of these patterns can be described using the same mathematical and physical principles, giving a surprising unity to the kaleidoscope of the natural world. Richly illustrated with 250 color photographs and anchored by accessible and insightful chapters by esteemed science writer Philip Ball, Patterns in Nature reveals the organization at work in vast and ancient forests, powerful rivers, massing clouds, and coastlines carved out by the sea. By exploring similarities such as the branches of a tree and those of a river network, this spectacular visual tour conveys the wonder, beauty, and richness of natural pattern formation.

A New York Times Bestseller A Forbes Top 10 Conservation and Environment Book of 2016 Read the sea like a Viking and interpret ponds like a Polynesian—with a little help from the "natural navigator"! In his eye-opening books The Lost Art of Reading Nature's Signs and The Natural Navigator, Tristan Gooley helped readers reconnect with nature by finding direction from the trees, stars, clouds, and more. Now, he turns his attention to our most abundant—yet perhaps least understood—resource. Distilled from his far-flung adventures—sailing solo across the Atlantic, navigating with Omani tribespeople, canoeing in Borneo, and walking in his own backyard—Gooley shares hundreds of techniques in How to Read Water. Readers will: Find north using puddles Forecast the weather from waves Decode the colors of ponds Spot dangerous water in the dark Decipher wave patterns on beaches, and more!

Software -- Software Engineering.

The biggest challenge facing many game programmers is completing their game. Most game projects fizzle out, overwhelmed by the complexity of their own code. Game Programming Patterns tackles that exact problem. Based on years of experience in shipped AAA titles, this book collects proven patterns to untangle and optimize your game, organized as independent recipes so you can pick just the patterns you need. You will learn how to write a robust game loop, how to organize your entities using components, and take advantage of the CPUs cache to improve your performance. You'll dive deep into how scripting engines encode behavior, how quadtrees and other spatial partitions optimize your engine, and how other classic design patterns can be used in games.