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W1J155 - MASON BYRON

While taking a class on infinity at Stanford in the late 1980s, Ravi Kapoor discovers that he is confronting the same mathematical and philosophical dilemmas that his mathematician grandfather had faced many decades earlier--and that had landed him in jail. Charged under an obscure blasphemy law in a small New Jersey town in 1919, Vijay Sahni is challenged by a skeptical judge to defend his belief that the certainty of mathematics can be extended to all human knowledge--including religion. Together, the two men discover the power--and the fallibility--of what has long been considered the pinnacle of human certainty, Euclidean geometry. As grandfather and grandson struggle with the question of whether there can ever be absolute certainty in mathematics or life, they are forced to reconsider their fundamental beliefs and choices. Their stories hinge on their explorations of parallel developments in the study of geometry and infinity--and the mathematics throughout is as rigorous and fascinating as the narrative and characters are compelling and complex. Moving and enlightening, *A Certain Ambiguity* is a story about what it means to face the extent--and the limits--of human knowledge.

The principal reason for using feedback is to reduce the effect of uncertainties in the description of a system which is to be controlled. H^∞ loop-shaping is emerging as a powerful but straightforward method of designing robust feedback controllers for complex systems. However, in order to use this, or other modern design techniques, it is first necessary to generate an accurate model of the system (thus appearing to remove the reason for needing feedback in the first place). The v -gap metric is an attempt to resolve this paradox — by indicating in what sense a model should be accurate if it is to be useful for feedback design. This book develops in detail the H^∞ loop-shaping design method, the v -gap metric and the relationship between the two, showing how they can be used together for successful feedback design. Contents: An Introduction to H^∞ Control H^∞ Loop-Shaping The v -Gap Metric More H^∞ Loop-Shaping Complexity and Robustness Design Examples Topologies, Metrics and Operator Theory Approximation in the Graph Topology The Best Possible H^∞ Robustness Results State-Space Formulae and Proofs Singular Value Inequalities Readership: Researchers in control engineering, electrical & electronic engineering, and systems & knowledge engineering. Reviews: "This book introduces both the loop-shaping design and the v -metric. Both topics are built from the ground up, and the result is a nice introduction." *Mathematical Reviews*

Most philosophers of mathematics treat it as isolated, timeless, ahistorical, inhuman. Reuben Hersh argues the contrary, that mathematics must be understood as a human activity, a social phenomenon, part of human culture, historically evolved, and intelligible only in a social context. Hersh pulls the screen back to reveal mathematics as seen by professionals, debunking many mathematical myths, and demonstrating how the "humanist" idea of the nature of mathematics more closely resembles how mathematicians actually work. At the heart of his book is a fascinating historical account of the mainstream of philosophy--ranging from Pythagoras, Descartes, and Spinoza, to Bertrand Russell,

David Hilbert, and Rudolph Carnap--followed by the mavericks who saw mathematics as a human artifact, including Aristotle, Locke, Hume, Mill, and Lakatos. *What is Mathematics, Really?* reflects an insider's view of mathematical life, and will be hotly debated by anyone with an interest in mathematics or the philosophy of science.

The standard rules of probability can be interpreted as uniquely valid principles in logic. In this book, E. T. Jaynes dispels the imaginary distinction between 'probability theory' and 'statistical inference', leaving a logical unity and simplicity, which provides greater technical power and flexibility in applications. This book goes beyond the conventional mathematics of probability theory, viewing the subject in a wider context. New results are discussed, along with applications of probability theory to a wide variety of problems in physics, mathematics, economics, chemistry and biology. It contains many exercises and problems, and is suitable for use as a textbook on graduate level courses involving data analysis. The material is aimed at readers who are already familiar with applied mathematics at an advanced undergraduate level or higher. The book will be of interest to scientists working in any area where inference from incomplete information is necessary.

When Mr Ruche, a reclusive Parisian bookseller, receives a letter from a long lost friend in the Amazon bequesting him a vast library of mathematical books, he is propelled into a great exploration of the story of maths, from brilliant Greek thinkers, such as Archimedes and Pythagoras, to the modern-day genius Fermat.

"[A] masterly investigation of evil, resistance and guilt, billed as the first Arab novel to confront the Holocaust" from the Nobel Prize-nominated author (Publishers Weekly). Banned in the author's native Algeria, this groundbreaking novel is based on a true story and inspired by the work of Primo Levi. The Schiller brothers, Rachel and Malrich, couldn't be more dissimilar. They were born in a small village in Algeria to a German father and an Algerian mother and raised by an elderly uncle in one of the toughest ghettos in France. But the similarities end there. Rachel is a model immigrant—hard working, upstanding, law-abiding. Malrich has drifted. Increasingly alienated and angry, a bleak future seems inevitable for him. But when Islamic fundamentalists murder the young men's parents in Algeria the destinies of both brothers are transformed. Rachel discovers the shocking truth about his family and buckles under the weight of the sins of his father, a former SS officer. Now Malrich, the outcast, will have to face that same awful truth alone. "The German Mujahid deals with the fine line between the destructive power wielded by Islamic fundamentalism today and the power of another movement that left an indelible mark on history: Nazism." —Haaretz (Israel) "With extraordinary eloquence, Sansal condemns both the [Algerian] military and the Islamic fundamentalists; he decries that Algeria crippled by trafficking, religion, bureaucracy, the culture of illegality, of coups, and of clans, career apologists, the glorification of tyrants, the love of flashy materialism, and the passion for rants." —Lire (France) "The German Mujahid, winner of the RTL-Lire Prize for fiction, is a marvelous, devilishly well-constructed novel." —L'Express (France)

"Our understanding of how the human brain performs mathematical calculations is far from complete. In *The Number Sense*, Stanislas Dehaene offers readers an enlightening exploration of the mathematical mind. Using research showing that human infants have a rudimentary number sense, Dehaene suggests that this sense is as basic as our perception of color, and that it is wired into the brain. But how then did we leap from this basic number ability to trigonometry, calculus, and beyond? Dehaene shows that it was the invention of symbolic systems of numerals that started us on the climb to higher mathematics. Tracing the history of numbers, we learn that in early times, people indicated numbers by pointing to part of their bodies, and how Roman numerals were replaced by modern numbers. On the way, we also discover many fascinating facts: for example, because Chinese names for numbers are short, Chinese people can remember up to nine or ten digits at a time, while English-speaking people can only remember seven. A fascinating look at the crossroads where numbers and neurons intersect, *The Number Sense* offers an intriguing tour of how the structure of the brain shapes our mathematical abilities, and how math can open up a window on the human mind"--Provided by publisher.

"Mark Wilson presents a highly original and broad-ranging investigation of the way we get to grips with the world conceptually, and the way that philosophical problems commonly arise from this. He combines traditional philosophical concerns about human conceptual thinking with illuminating data derived from a large variety of fields including physics and applied mathematics, cognitive psychology, and linguistics. *Wandering Significance* offers abundant new insights and perspectives for philosophers of language, mind, and science, and will also reward the interest of psychologists, linguists, and anyone curious about the mysterious ways in which useful language obtains its practical applicability."--Publisher's description.

This volume describes, in words and with artworks, the basic principles of numbers - arithmetic, whole numbers, natural numbers and the concepts of zero and infinity. It examines: how old numbers are and how they were developed; who invented algebra, geometry and calculus; how these ideas affect our daily lives; and the ways in which numbers have been used in art, music and other disciplines.

This authoritative reference, the first of its kind, is a necessary addition to the library of any practitioner or behaviorist who sees avian companion animals. Because of their beauty, intelligence, playfulness and ability in mimicry, parrots are the most widely kept companion birds. It is estimated that more than half of the psittacine cases presented to clinicians are the result of behavioral problems-problems inherent to captivity. Bringing together a host of international experts on avian behavior, *Manual of Parrot Behavior* explores the many facets of psittacine behavior, both normal and abnormal. The book not only provides readers with a solid understanding of the basic principles of psittacine behavior but also offers useful techniques of diagnosis and treatment for specific problems. Covers both normal and abnormal parrot behavior Offers practical techniques on diagnosis and treatment of behavior problems Written by a team of international experts on avian behavior A necessary addition to the library of any practitioner of behaviorist who sees avian companion animals

The book provides a contemporary view on different aspects of the deductive systems in various types of logics including term logics, propositional logics, logics of refutation, non-Fregean logics, higher order logics and arithmetic.

Winner of the Prix Renaudot 2019 'Extraordinarily beautiful... a long last loving glance at the planet.' Carl Safina, author of *Becoming Wild* *The Art of Patience* sees the renowned French adven-

turer and writer set off for the high plateaux of remotest Tibet in search of the elusive snow leopard. There, in the company of leading wildlife photographer Vincent Munier and two companions, at 5,000 metres and in temperatures of -25°C, the team set up their hides on exposed mountainsides, and occasionally in the luxury of an icy cave, to await a visitation from the almost mythical beast. This tightly focused and tautly written narrative is simultaneously a dazzling account of an exacting journey, an apprenticeship in the art of patience, an acceptance of the ruthlessness of the natural world and, finally, a plea for ecological sanity. A small masterpiece, it is one of those books that demands to be read again and again.

Seeks to explore the nature of left- and right-handedness in nature and history, addressing such topics as the cognitive differences of left-handed people, the reason Arabic and Hebrew writing goes from right to left, and the reason tornadoes spin according to their hemispheres. (Science & Mathematics)

Information is the cornerstone of life, yet it is something people don't often think about. In his fascinating new book, *In the Beginning Was Information*, Dr. Werner Gitt helps the reader see how the very presence of information reveals a Designer.

Shortlisted for the Man Booker Prize 2015 Shortlisted for the Baileys Prize for Women's Fiction 2016 Finalist for the National Book Awards 2015 The million copy bestseller, *A Little Life* by Hanya Yanagihara, is an immensely powerful and heartbreaking novel of brotherly love and the limits of human endurance. When four graduates from a small Massachusetts college move to New York to make their way, they're broke, adrift, and buoyed only by their friendship and ambition. There is kind, handsome Willem, an aspiring actor; JB, a quick-witted, sometimes cruel Brooklyn-born painter seeking entry to the art world; Malcolm, a frustrated architect at a prominent firm; and withdrawn, brilliant, enigmatic Jude, who serves as their centre of gravity. Over the decades, their relationships deepen and darken, tinged by addiction, success, and pride. Yet their greatest challenge, each comes to realize, is Jude himself, by midlife a terrifyingly talented litigator yet an increasingly broken man, his mind and body scarred by an unspeakable childhood, and haunted by what he fears is a degree of trauma that he'll not only be unable to overcome - but that will define his life forever.

A novel based on the 1792 attempt to measure the prime meridian follows a group of scientific pioneers sent by the revolutionary government of France to accomplish this important task.

Mr. Ruche, a Parisian bookseller, receives a bequest from a long lost friend in the Amazon of a vast library of math books, which propels him into a great exploration of the story of mathematics. Meanwhile Max, whose family lives with Mr. Ruche, takes in a voluble parrot who will discuss math with anyone. When Mr. Ruche learns of his friend's mysterious death in a Brazilian rainforest, he decides that with the parrot's help he will use these books to teach Max and his brother and sister the mysteries of Euclid's Elements, Pythagoras's Theorem and the countless other mathematical wonders. But soon it becomes clear that Mr. Ruche has inherited the library for reasons other than enlightenment, and before he knows it the household is racing to prevent the parrot and vital, new theorems from falling into the wrong hands. An immediate bestseller when first published in France, *The Parrot's Theorem* charmingly combines a straightforward history of mathematics and a first-rate murder mystery.

A Concise Introduction to Languages, Machines and Logic provides an accessible introduction to three key topics within computer science: formal languages, abstract machines and formal logic. Written in an easy-to-read, informal style, this textbook assumes only a basic knowledge of programming on the part of the

reader. The approach is deliberately non-mathematical, and features: - Clear explanations of formal notation and jargon, - Extensive use of examples to illustrate algorithms and proofs, - Pictorial representations of key concepts, - Chapter opening overviews providing an introduction and guidance to each topic, - End-of-chapter exercises and solutions, - Offers an intuitive approach to the topics. This reader-friendly textbook has been written with undergraduates in mind and will be suitable for use on course covering formal languages, formal logic, computability and automata theory. It will also make an excellent supplementary text for courses on algorithm complexity and compilers.

In a comprehensive yet easy-to-follow manner, *Discrete Mathematics for New Technology* follows the progression from the basic mathematical concepts covered by the GCSE in the UK and by high-school algebra in the USA to the more sophisticated mathematical concepts examined in the latter stages of the book. The book punctuates the rigorous treatment of theory with frequent uses of pertinent examples and exercises, enabling readers to achieve a feel for the subject at hand. The exercise hints and solutions are provided at the end of the book. Topics covered include logic and the nature of mathematical proof, set theory, relations and functions, matrices and systems of linear equations, algebraic structures, Boolean algebras, and a thorough treatise on graph theory. Although aimed primarily at computer science students, the structured development of the mathematics enables this text to be used by undergraduate mathematicians, scientists, and others who require an understanding of discrete mathematics.

The Wind Traveler showcases the mesmerizing storytelling of Alonso Cueto at the top of his career. At the heart of his latest work is a seemingly ordinary man named Ángel, who sells kitchenware at a store in Lima. In the early 1990s, he had served as an army soldier, engaging in brutal acts whose aftermath still reverberates. He is forced to reckon with his past when a woman he was instructed to kill enters the store and buys a few items. How can she still be alive? What's more, how can she not recognize Ángel? Remarkably, she asks him to deliver her purchases to her house. From this moment, Ángel feels compelled to make amends through any means necessary, even if it requires sacrificing his life of quiet retirement. A stirring tribute to the wounded souls who yearn to make peace with the past, *The Wind Traveler* offers a new vision of the fragile human connections that sustain a deeply fractured world.

Flash is fading fast as Canvas continues to climb. The second edition of this popular book gets you started with HTML5 Canvas by showing you how to build interactive multimedia applications. You'll learn how to draw, render text, manipulate images, and create animation—all in the course of building an interactive web game throughout the book. Updated for the latest implementations of Canvas and related HTML5 technologies, this edition includes clear and reusable code examples to help you quickly pick up the basics—whether you currently use Flash, Silverlight, or just HTML and JavaScript. Discover why HTML5 is the future of innovative web development. Create and modify 2D drawings, text, and bitmap images Use algorithms for math-based movement and physics interactions Incorporate and manipulate video, and add audio Build a basic framework for creating a variety of games Use bitmaps and tile sheets to develop animated game graphics Go mobile: build web apps and then modify them for iOS devices Explore ways to use Canvas for 3D and multiplayer game applications

Renaissance Fun is about the technology of Renaissance entertainments in stage machinery and theatrical special effects; in gardens and fountains; and in the automata and self-playing musical instruments that were installed in garden grottoes. How did

the machines behind these shows work? How exactly were chariots filled with singers let down onto the stage? How were flaming dragons made to fly across the sky? How were seas created on stage? How did mechanical birds imitate real birdsong? What was 'artificial music', three centuries before Edison and the phonograph? How could pipe organs be driven and made to play themselves by waterpower alone? And who were the architects, engineers, and craftsmen who created these wonders? All these questions are answered. At the end of the book we visit the lost 'garden of marvels' at Pratolino with its many grottoes, automata and water jokes; and we attend the performance of Mercury and Mars in Parma in 1628, with its spectacular stage effects and its music by Claudio Monteverdi – one of the places where opera was born. *Renaissance Fun* is offered as an entertainment in itself. But behind the show is a more serious scholarly argument, centred on the enormous influence of two ancient writers on these subjects, Vitruvius and Hero. Vitruvius's *Ten Books on Architecture* were widely studied by Renaissance theatre designers. Hero of Alexandria wrote the *Pneumatics*, a collection of designs for surprising and entertaining devices that were the models for sixteenth and seventeenth century automata. A second book by Hero *On Automata-Making* – much less well known, then and now – describes two miniature theatres that presented plays without human intervention. One of these, it is argued, provided the model for the type of proscenium theatre introduced from the mid-sixteenth century, the generic design which is still built today. As the influence of Vitruvius waned, the influence of Hero grew.

Uncle Petros is a family joke. An ageing recluse, he lives alone in a suburb of Athens, playing chess and tending to his garden. If you didn't know better, you'd surely think he was one of life's failures. But his young nephew suspects otherwise. For Uncle Petros, he discovers, was once a celebrated mathematician, brilliant and foolhardy enough to stake everything on solving a problem that had defied all attempts at proof for nearly three centuries - Goldbach's Conjecture. His quest brings him into contact with some of the century's greatest mathematicians, including the Indian prodigy Ramanujan and the young Alan Turing. But his struggle is lonely and single-minded, and by the end it has apparently destroyed his life. Until that is a final encounter with his nephew opens up to Petros, once more, the deep mysterious beauty of mathematics. *Uncle Petros and Goldbach's Conjecture* is an inspiring novel of intellectual adventure, proud genius, the exhilaration of pure mathematics - and the rivalry and antagonism which torment those who pursue impossible goals.

On a balmy summer's day in Oxford an old lady who once helped decipher the Enigma Code is killed. After receiving a cryptic anonymous note containing only the address and the symbol of a circle, Arthur Seldom, a leading mathematician, arrives to find the body. Then follow more murders - an elderly man on a life-support machine is found dead with needle marks in his throat; the percussionist of an orchestra at a concert at Blenheim Palace dies before the audience's very eyes - seemingly unconnected except for notes appearing in the maths department, for the attention of Seldom. Why is he being targeted as the recipient of these coded messages? All he can conjecture is that it might relate to his latest book, an unexpected bestseller about serial killers and the parallels between investigations into their crimes and certain mathematical theorems. It is left to Seldom and a postgraduate mathematics student to work out the key to the series of symbols before the killer strikes again.

The first detailed collation of the evolution, ecology and conservation of some of South America's least-known, and most endangered, primates.

Rock star Alexandre Bleach might be dead, but he has a secret.

It's a secret that concerns several people, but the only person who can unlock it is Vernon Subutex, former record shop proprietor turned homeless messiah and guru, last seen hallucinating and feverish on a bench in the parc des Buttes Chaumont. Aïcha wants to know the truth behind the death of her mother, Vodka Satana. And if she finds the bastards responsible, she wants to make them pay, whatever Céleste thinks of her plan. Céleste wants Aïcha to get a grip and stop hanging around with Subutex's gang of disciples. The Hyena wants to find the Bleach tapes. She wants to untangle her complicated feelings about Anaïs, her boss' assistant. And speaking of her boss, she does not want Laurent Dopalet to discover how badly she has double-crossed him. Laurent Dopalet wants the Hyena to find and destroy the Bleach tapes. He wants to forget he ever knew Vodka Satana. He wants people to stop graffitiing his apartment with ludicrous allegations. Above all, he wants people to understand: NONE OF THIS IS HIS FAULT. THE SEQUEL TO VERNON SUBUTEX 1, SHORTLISTED FOR THE MAN BOOKER INTERNATIONAL PRIZE 2018. Translated from the French by Frank Wynne

A daring, moving fictional account of the last moments of a father and his two sons atop the World Trade Centre on September 11.

The first of the annual Operator Theory conferences in Timișoara held four years ago was a meeting of operator theory specialists from the National Institute for Scientific and Technical Creation in Bucharest and from the University of Timișoara. Since then, the participation to these conferences has greatly increased, by being attended first by operator theorists from all over the country and (since 1978) by an increasing number of foreign mathematicians. Thus the 1980 Conference can be regarded as a truly international Operator Theory meeting, fifteen countries being represented at it. These conferences are conceived as a means to promote the cooperation between specialists in all areas of Operator Theory. Among the main topics in 1980 were: dilation theory, invariant subspaces, connections with the theory of C^* -algebras, subnormal operators, multidimensional functional calculus etc. Though not included in this volume, we would like to mention that in 1980 some special sessions concerning other fields of Functional Analysis were organized at the Operator Theory conference. The research contracts of the Department of Mathematics of INCREST with the National Council for Sciences and Technology of Romania provided the means for developing the research activity in Functional Analysis; these contracts constitute the generous framework for these meetings.

The *Animal That Therefore I Am* is the long-awaited translation of the complete text of Jacques Derrida's ten-hour address to the 1997 C erisy conference entitled "The Autobiographical Animal," the third of four such colloquia on his work. The book was assembled posthumously on the basis of two published sections, one written and recorded session, and one informal recorded session. The book is at once an affectionate look back over the multiple roles played by animals in Derrida's work and a profound philosophical investigation and critique of the relegation of animal life that takes place as a result of the distinction--dating from Descartes--between man as thinking animal and every other living species. That starts with the very fact of the line of separation drawn between the human and the millions of other species that are reduced to a single "the animal." Derrida finds that distinction, or versions of it, surfacing in thinkers as far apart as Descartes, Kant, Heidegger, Lacan, and Levinas, and he dedicates extended analyses to the question in the work of each of them. The book's autobiographical theme intersects with its philosophical analysis through the figures of looking and nakedness, staged in terms of Derrida's experience when his cat follows him into the bathroom in the morning. In a classic deconstructive reversal,

Derrida asks what this animal sees and thinks when it sees this naked man. Yet the experiences of nakedness and shame also lead all the way back into the mythologies of "man's dominion over the beasts" and trace a history of how man has systematically displaced onto the animal his own failings or *b etises*. The *Animal That Therefore I Am* is at times a militant plea and indictment regarding, especially, the modern industrialized treatment of animals. However, Derrida cannot subscribe to a simplistic version of animal rights that fails to follow through, in all its implications, the questions and definitions of "life" to which he returned in much of his later work.

'What is a self and how can a self come out of inanimate matter?' This is the riddle that drove Douglas Hofstadter to write this extraordinary book. In order to impart his original and personal view on the core mystery of human existence - our intangible sensation of 'I'-ness - Hofstadter defines the playful yet seemingly paradoxical notion of 'strange loop', and explicates this idea using analogies from many disciplines.

Mathematics of Social Choice is a fun and accessible book that looks at the choices made by groups of people with different preferences, needs, and interests. Divided into three parts, the text first examines voting methods for selecting or ranking candidates. A brief second part addresses compensation problems wherein an indivisible item must be assigned to one of several people who are equally entitled to ownership of the item, with monetary compensation paid to the others. The third part discusses the problem of sharing a divisible resource among several people. *Mathematics of Social Choice* can be used by undergraduates studying mathematics and students whose only mathematical background is elementary algebra. More advanced material can be skipped without any loss of continuity. The book can also serve as an easy introduction to topics such as the Gibbard-Satterthwaite theorem, Arrow's theorem, and fair division for readers with more mathematical background.

This book is a captivating account of a professional mathematician's experiences conducting a math circle for preschoolers in his apartment in Moscow in the 1980s. As anyone who has taught or raised young children knows, mathematical education for little kids is a real mystery. What are they capable of? What should they learn first? How hard should they work? Should they even "work" at all? Should we push them, or just let them be? There are no correct answers to these questions, and the author deals with them in classic math-circle style: he doesn't ask and then answer a question, but shows us a problem--be it mathematical or pedagogical--and describes to us what happened. His book is a narrative about what he did, what he tried, what worked, what failed, but most important, what the kids experienced. This book does not purport to show you how to create precocious high achievers. It is just one person's story about things he tried with a half-dozen young children. Mathematicians, psychologists, educators, parents, and everybody interested in the intellectual development in young children will find this book to be an invaluable, inspiring resource. In the interest of fostering a greater awareness and appreciation of mathematics and its connections to other disciplines and everyday life, MSRI and the AMS are publishing books in the *Mathematical Circles Library* series as a service to young people, their parents and teachers, and the mathematics profession. Titles in this series are co-published with the Mathematical Sciences Research Institute (MSRI).

After his friend Stefanos Kantartzis is found murdered in 1929 Athens, Michael Igerinos investigates whether the solution of a mathematical problem drove someone to commit the dirty deed. Reprint.

How would a creature limited to two dimensions be able to grasp

the possibility of a third? In Flatland, A Square's linear world is invaded by a Sphere bringing the gospel of the third dimension. Part geometry lesson, part social satire, the novel enlarges readers' imaginations beyond the limits of our 'respective dimensional prejudices'.

The principal reason for using feedback is to reduce the effect of uncertainties in the description of a system which is to be controlled. $H[\infty]$ loop-shaping is emerging as a powerful but straightforward method for designing robust feedback controllers for complex systems. However, in order to use this, or other modern design techniques, it is first necessary to generate an accurate model of the system (thus appearing to remove the reason for needing feedback in the first place). The v-gap metric is an attempt to resolve this paradox - by indicating in what sense a model should be accurate if it is to be useful for feedback design. This book develops in detail the $H[\infty]$ loop-shaping design method, the v-gap metric and the relationship between the two, showing how they can be used together for successful feedback design.

Self-contained introduction to control theory that emphasizes on the most modern designs for high performance and robustness. It

assumes no previous coursework and offers three chapters of key topics summarizing classical control. To provide readers with a deeper understanding of robust control theory than would be otherwise possible, the text incorporates mathematical derivations and proofs. Includes many elementary examples and advanced case studies using MATLAB Toolboxes.

First there was Edwin A. Abbott's remarkable Flatland, published in 1884, and one of the all-time classics of popular mathematics. Now, from mathematician and accomplished science writer Ian Stewart, comes what Nature calls "a superb sequel." Through larger-than-life characters and an inspired story line, Flatterland explores our present understanding of the shape and origins of the universe, the nature of space, time, and matter, as well as modern geometries and their applications. The journey begins when our heroine, Victoria Line, comes upon her great-great-grandfather A. Square's diary, hidden in the attic. The writings help her to contact the Space Hopper, who tempts her away from her home and family in Flatland and becomes her guide and mentor through ten dimensions. In the tradition of Alice in Wonderland and The Phantom Toll Booth, this magnificent investigation into the nature of reality is destined to become a modern classic.