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from cell phones to portals advances in information and communications technology have thrust society into an information age that is far reaching fast moving increasingly complex and yet essential to modern life now renowned scholar and author david luenberger has produced information science a text that distills and explains the most important concepts and insights at the core of this ongoing revolution the book represents the material used in a widely acclaimed course offered at stanford university drawing concepts from each of the constituent subfields that collectively comprise information science luenberger builds his book around the five e s of information entropy economics encryption extraction and emission each area directly impacts modern information products services and technology everything from word processors to digital cash database systems to decision making marketing strategy to spread spectrum communication to study these principles is to learn how english text music and pictures can be compressed how it is possible to construct a digital signature that cannot simply be copied how beautiful photographs can be sent from distant planets with a tiny battery how communication networks expand and how producers of information products can make a profit under difficult market conditions the book contains vivid examples illustrations exercises and points of historic interest all of which bring to life the analytic methods presented presents a unified approach to the field of information science emphasizes basic principles includes a wide range of examples and applications helps students develop important new skills suggests exercises with solutions in an instructor s manual □□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□ □□□□□ □□□□□□□ □□□□ □□□□□□□□□ □□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□ this third edition of the classic textbook in optimization has been fully revised and updated it comprehensively covers modern theoretical insights in this crucial computing area and will be required reading for analysts and operations researchers in a variety of fields the book connects the purely analytical character of an optimization problem and the behavior of algorithms used to solve it now the third edition has been completely updated with recent optimization methods the book also has a new co author yinyu ye of california s stanford university who has written lots of extra material including some on interior point methods investment science is designed for the core theoretical finance course in quantitative investment and for those individuals interested in the current state of development in the field what the essential ideas are how they are represented how they are represented how they can be used inactual investment practice and where the field might be headed in the future the coverage is similar to more intuitive texts but goes much farther in terms of mathematical content featuring varying levels of mathematical sophistication throughout the emphasis of the text is on the fundamentalprinciples and how they can be mastered and transformed into solutions of important and interesting investment problems end of the chapter exercises are also included and unlike most books in the field investment science does not concentrate on institutional detail but instead focuses onmethodology engineers must make decisions regarding the distribution of expensive resources in a manner that will be economically beneficial this problem can be realistically formulated and logically analyzed with optimization theory this book shows engineers how to use optimization theory to solve complex problems unifies the large field of optimization with a few geometric principles covers functional analysis with a minimum of mathematics contains problems that relate to the applications in the book difference and differential equations linear algebra linear state equations linear systems with constant coefficients positive systems markov chains concepts of control analysis of nonlinear systems some important dynamic systems optimal control python□□□□□□□□□□□□□□ □□□□ □□□□□□□□□ □□□□□□□□□□ □□□□□□ □□ ict□□□□□□□ □□□ □□□□□□□□□ □□ □□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□ □□□□□□ □□ □□□□□□□ python□□□□□□□□□□□□□□□□□□□ □□□□□□□□ □□ □□□□□□□□□□□□□□□□□□□ □□□□□□ □□□□□□□□□□ □□□□□ □ □□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ python□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□ □□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □2□□□□□□□□□□□□□□□□□□□ □□□□□□ □□□ autoencoder gan □ □□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□ python□□□□□□□□□□□□□□□ □□□□ 1□ □□□□ 2□ □□□□□□□□□□□ 3□ □□□□□ 4□ □□□□□ 5□ □□□□ 6□ □□□□□□ 7□ □□□□□□□□ 8□ □□□□□□□ 9□ □□□□□□□□□□□ 10□ □□□ □□□□□□□□□□ 11□ □□□□□□□ 12□ □□□□□□ □□ this volume provides the definitive treatment of fortune s formula or the kelly capital growth criterion as it is often called the strategy is to maximize long run wealth of the investor by maximizing the period by period expected utility of wealth with a logarithmic utility function mathematical theorems show that only the log utility function maximizes asymptotic long run wealth and minimizes the expected time to arbitrary large goals in general the strategy is risky in the short term but as the number of bets increase the kelly bettor s wealth tends to be much larger than those with essentially different strategies so most of the time the kelly bettor will have much more wealth than these other bettors but the kelly strategy can lead to considerable losses a small percent of the time there are ways to reduce this risk at the cost of lower expected final wealth using fractional kelly strategies that blend the kelly suggested wager with cash the various classic reprinted papers and the new ones written specifically for this volume cover various aspects of the theory and practice of dynamic investing good and bad properties are discussed as are fixed mix and volatility induced growth strategies the relationships with utility theory and the use of these ideas by great investors are featured this volume includes some of the key research papers in the area of machine learning produced at mit and siemens during a three year joint research effort it includes papers on many different styles of machine learning organized into three parts part i theory includes three papers on theoretical aspects of

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machine learning the first two use the theory of computational complexity to derive some fundamental limits on what isefficiently learnable the third provides an efficient algorithm for identifying finite automata part ii artificial intelligence and symbolic learning methods includes five papers giving an overview of the state of the art and future developments in the field of machine learning a subfield of artificial intelligence dealing with automated knowledge acquisition and knowledge revision part iii neural and collective computation includes five papers sampling the theoretical diversity and trends in the vigorous new research field of neural networks massively parallel symbolic induction task decomposition through competition phoneme discrimination behavior based learning and self repairing neural networks □□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □ □□□fta fmea pert □□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□ □□□□□□□□□□ pert□cpm 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recognitionwill certainly simplify and benefit from this theory we study the pervasive convex euclidean bodies and their various representations in particular we make convex polyhedra cones and dual cones more visceral through illustration andwe study the geometric relation of polyhedral cones to nonorthogonal bases biorthogonal expansion we explain conversion between halfspace and vertex descriptions of convex cones we provide formulae for determining dual cones and we show how classic alternative systems of linear inequalities or linear matrix inequalities and optimality conditions can be explained by generalized inequalities in terms of convex cones and their duals the conic analogue to linear independence called conic independence is introducedas a new tool in the study of classical cone theory the logical next step in the progression linear affine conic any convex optimization problem has geometric interpretation this is a powerful attraction the ability to visualize geometry of an optimization problem we provide tools to make visualization easier the concept of faces extreme points and extreme directions of convex euclidean bodiesis explained here crucial to understanding convex optimization the convex cone of positive semidefinite matrices in particular is studied in depth we mathematically interpret for example its inverse image under affine transformation and we explainhow higher rank subsets of its boundary united with its interior are convex the chapter on geometry of convex functions observes analogies between convex sets and functions the set of all vector valued convex functions is a closed convex cone included among the examples in this chapter we show how the real affinefunction relates to convex functions as the hyperplane relates to convex sets here also pertinent results formultidimensional convex functions are presented that are largely ignored in the literature tricks and tips for determining their convexityand discerning their geometry particularly with regard to matrix calculus which remains largely unsystematizedwhen compared with the traditional practice of ordinary calculus consequently we collect some results of matrix differentiation in the appendices the euclidean distance matrix edm is studied its properties and relationship to both positive semidefinite and gram matrices we relate the edm to the four classical axioms of the euclidean metric thereby observing the existence of an infinity of axioms of the euclidean metric beyondthe triangle inequality we proceed byderiving the fifth euclidean axiom and then explain why furthering this endeavoris inefficient because the ensuing criteria while describing polyhedra grow linearly in complexity and number some geometrical problems solvable via edms edm problems posed as convex optimization and methods of solution arepresented eg we generate a recognizable isotonic map of the united states usingonly comparative distance information no distance information only distance inequalities we offer a new proof of the classic schoenberg criterion that determines whether a candidate matrix is an edm our proofrelies on fundamental geometry assuming any edm must correspond to a list of points contained in some polyhedron possibly at its vertices and vice versa it is not widely known that the schoenberg criterion implies nonnegativity of the edm entries proved here we characterize the eigenvalues of an edm matrix and then devisea polyhedral cone required for determining membership of a candidate matrix in cayley menger form to the convex cone of euclidean distance matrices edm cone ie a candidate is an edm if and only if its eigenspectrum belongs to a spectral cone for edm n we will see spectral cones are not unique in the chapter edm cone we explain the geometric relationship betweenthe edm cone two positive semidefinite cones and the elliptope we illustrate geometric requirements in particular for projection of a candidate matrixon a positive semidefinite cone that establish its membership to the edm cone the faces of the edm cone are described but still open is the question whether all its faces are exposed as they are for the positive semidefinite cone the classic schoenberg criterion relating edm and positive semidefinite cones isrevealed to be a discretized membership relation a generalized inequality a new farkas like lemma between the edm cone and its ordinary dual a matrix criterion for membership to the dual edm cone is derived thatis simpler than the schoenberg criterion we derive a new concise expression for the edm cone and its dual involvingtwo subspaces and a positive semidefinite cone semidefinite programming is reviewedwith particular attention to optimality conditionsof prototypical primal and dual conic programs their interplay and the perturbation method of rank reduction of optimal solutions extant but not well known we show how to solve a ubiquitous platonic combinatorial optimization problem from linear algebra the optimal boolean solution x to ax b via semidefinite program relaxation a three dimensional polyhedral analogue for the positive semidefinite cone of 3x3 symmetricmatrices is introduced a tool for visualizing in 6 dimensions in edm proximity we explore methods of solution to a few fundamental and prevalenteuclidean distance matrix proximity problems the problem of finding that euclidean distance matrix closestto a given matrix in the euclidean sense we pay particular attention to the problem when compounded with rank minimization we offer a new geometrical proof of a famous result discovered by eckart young in 1936 regarding euclideanprojection of a point on a subset of the positive semidefinite cone comprising all positive semidefinite matriceshaving rank not exceeding a prescribed limit rho we explain how this problem is transformed to a convex optimization for any rank rho □□□□□□□□□□□□□□□□□□□□□ in recent years the study of difference equations has acquired a new significance due in large part to their use in the formulation and analysis of discrete time systems the numerical integration of differential equations by finite difference schemes and the study of deterministic chaos the second edition of difference equations theory and applications provides a thorough listing of all major theorems along with proofs the text treats the case of first order difference equations in detail using both analytical and geometrical methods both ordinary and partial difference equations are considered along with a variety of special nonlinear forms for which exact solutions can be determined numerous worked examples and problems allow readers to fully understand the material in the text they also give possible generalization of the theorems and application models the text s expanded coverage of application helps readers appreciate the benefits of using difference equations in the modeling and analysis of realistic problems from a broad range of fields the second edition presents analyzes and discusses a large number of applications from the mathematical biological physical and social sciences discussions on perturbation methods and difference equation models of differential equation models of differential equations represent contributions by the author to the research literature reference to original literature show how the elementary models of the book can be extended to more realistic situations difference equations second edition gives readers a background in discrete mathematics that many workers in science oriented industries need as part of their general scientific knowledge with its minimal mathematical background requirements of general algebra and calculus this unique volume will be used extensively by students and professional in science and technology in areas such as applied mathematics control theory population science economics and electronic circuits especially discrete signal processing this monograph is intended for the designers and would be designers of secure and efficient wireless communication systems under intentional interference along with the widespread of wireless devices especially reconfigurable software defined radios jamming has become a serious threat to civilian communications in this book going beyond traditional communication system design that mainly focuses on accurate information transmission under benign environments we aim to enhance the physical layer security of communication systems by integrating modern cryptographic techniques into transceiver design so as to achieve secure high speed transmission under hostile interference with high reliability and efficiency we revisit existing jamming patterns and introduce new jamming patterns we analyze the weaknesses of existing anti jamming techniques we present innovative and feasible anti jamming techniques which can strengthen the inherent security of the 3g 4g and the upcoming 5g systems with minimal and inexpensive changes to the existing cdma frequency hopping and ofdm schemes we also provide benchmarks for system performance evaluation under various jamming scenarios through capacity analysis this book includes design principles in depth theoretical analysis and practical design examples and will be of interest to academic researchers as well as professionals in industry a gripping insight into the digital debate over data ownership permanence and policy this is going on your permanent record is a threat that has never held more weight than it does in the internet age when information lasts indefinitely the ability to make good on that threat is as democratized as posting a tweet or making blog data about us is created shared collected analyzed and processed at an overwhelming scale the damage caused can be severe affecting relationships employment academic success and any number of other opportunities and it can also be long lasting one possible solution to this threat a digital right to be forgotten which would in turn create a legal duty to delete hide or anonymize information at the request of another user the highly controversial right has been criticized as a repugnant affront to principles of expression and access as unworkable as a technical measure and as effective as trying to put the cat back in the bag ctrl z breaks down the debate and provides guidance for a way forward it argues that the existing perspectives are too limited offering easy forgetting or none at all by looking at new theories of privacy and organizing the many potential applications of the right law and technology scholar meg leta jones offers a set of nuanced choices to help us choose she provides a digital information life cycle reflects on particular legal cultures and analyzes international interoperability in the end the right to be forgotten can be innovative liberating and globally viable □□□□□□□□□□□□□□□□□□□□□□□ □□ □□□□□□□□□□□□□ □□□□□□ □□□□□□□□□□□□□□ difference equations theory applications and advanced topics third edition provides a broad introduction to the mathematics of difference equations and some of their applications many worked examples illustrate how to calculate both exact and approximate solutions to special classes of difference equations along with adding several advanced to gain new insights into why asset allocation works and learn advanced investing strategies you know that asset allocation requires much more than cookie cutter analysis you want precise detailed techniques for analyzing and applying asset allocation principles the high level applications oriented mastering the art of asset allocation examines the inner working of numerous asset allocation strategies and covers everything from ways to determine the portfolio value of various asset classes to insights into changing patterns of investment returns and standard deviations in different time periods and market environments □□□□□□□ □□□□□□□□□□□□□ python□□□□□□□□□□□□□□□□□ □□□□□□□□ □□□□□□□□□ □□□□□□□□□□□□□□□□□□ □□□□ □□□□□□□ □□□□□□□□□ □□□□□□□□□ □□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□ □□□ □□□□□□□□ □□□□□□□□□□ □□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□ □□□□□□□ □□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□ □□□□□□□□□□ □□□□ □□□□□□ □□□□□□□□□ □□□□□□ □□□□ □□□□□□ □□□ var □ □□□□□□□ □□□□□□□□ □□□□□□ □□ □□□□□□□□ □□□ □□□□□□□□□□□□□□□□□□ □□□ □□□□□□□□

Information Science

2012-01-12

from cell phones to portals advances in information and communications technology have thrust society into an information age that is far reaching fast moving increasingly complex and yet essential to modern life now renowned scholar and author david luenberger has produced information science a text that distills and explains the most important concepts and insights at the core of this ongoing revolution the book represents the material used in a widely acclaimed course offered at stanford university drawing concepts from each of the constituent subfields that collectively comprise information science luenberger builds his book around the five e s of information entropy economics encryption extraction and emission each area directly impacts modern information products services and technology everything from word processors to digital cash database systems to decision making marketing strategy to spread spectrum communication to study these principles is to learn how english text music and pictures can be compressed how it is possible to construct a digital signature that cannot simply be copied how beautiful photographs can be sent from distant planets with a tiny battery how communication networks expand and how producers of information products can make a profit under difficult market conditions the book contains vivid examples illustrations exercises and points of historic interest all of which bring to life the analytic methods presented presents a unified approach to the field of information science emphasizes basic principles includes a wide range of examples and applications helps students develop important new skills suggests exercises with solutions in an instructor s manual

Investment Science

2006

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2015-03

this third edition of the classic textbook in optimization has been fully revised and updated it comprehensively covers modern theoretical insights in this crucial computing area and will be required reading for analysts and operations researchers in a variety of fields the book connects the purely analytical character of an optimization problem and the behavior of algorithms used to solve it now the third edition has been completely updated with recent optimization methods the book also has a new co author yinyu ye of california s stanford university who has written lots of extra material including some on interior point methods

Linear and Nonlinear Programming

2008-07-07

investment science is designed for the core theoretical finance course in quantitative investment and for those individuals interested in the current state of development in the field what the essential ideas are how they are represented how they are represented how they can be used inactual investment practice and where the field might be headed in the future the coverage is similar to more intuitive texts but goes much farther in terms of mathematical content featuring varying levels of mathematical sophistication throughout the emphasis of the text is on the fundamentalprinciples and how they can be mastered and transformed into solutions of important and interesting investment problems end of the chapter exercises are also included and unlike most books in the field investment science does not concentrate on institutional detail but instead focuses onmethodology

Solutions Manual for Investment Science

1998

engineers must make decisions regarding the distribution of expensive resources in a manner that will be economically beneficial this problem can be realistically formulated and logically analyzed with optimization theory this book shows engineers how to use optimization theory to solve complex problems unifies the large field of optimization with a few geometric principles covers functional analysis with a minimum of mathematics contains problems that relate to the applications in the book

Optimization by Vector Space Methods

1997-01-23

difference and differential equations linear algebra linear state equations linear systems with constant coefficients positive systems markov chains concepts of control analysis of nonlinear systems some important dynamic systems optimal control

Introduction to Dynamic Systems

1979-05-28

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Microeconomic theory. Solutions manual to accompany "Microeconomic theory"

1995

this volume provides the definitive treatment of fortune s formula or the kelly capital growth criterion as it is often called the strategy is to maximize long run wealth of the investor by maximizing the period by period expected utility of wealth with a logarithmic utility function mathematical theorems show that only the log utility function maximizes asymptotic long run wealth and minimizes the expected time to arbitrary large goals in general the strategy is risky in the short term but as the number of bets increase the kelly bettor s wealth tends to be much larger than those with essentially different strategies so most of the time the kelly bettor will have much more wealth than these other bettors but the kelly strategy can lead to considerable losses a small percent of the time there are ways to reduce this risk at the cost of lower expected final wealth using fractional kelly strategies that blend the kelly suggested wager with cash the various classic reprinted papers and the new ones written specifically for this volume cover various aspects of the theory and practice of dynamic investing good and bad properties are discussed as are fixed mix and volatility induced growth strategies the relationships with utility theory and the use of these ideas by great investors are featured

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2023-11-21

this volume includes some of the key research papers in the area of machine learning produced at mit and siemens during a three year joint research effort it includes papers on many different styles of machine learning organized into three parts part i theory includes three papers on theoretical aspects of machine learning the first two use the theory of computational complexity to derive some fundamental limits on what isefficiently learnable the third provides an efficient algorithm for identifying finite automata part ii artificial intelligence and symbolic learning methods includes five papers giving an overview of the state of the art and future developments in the field of machine learning a subfield of artificial intelligence dealing with automated knowledge acquisition and knowledge revision part iii neural and collective computation includes five papers sampling the theoretical diversity and trends in the vigorous new research field of neural networks massively parallel symbolic induction task decomposition through competition phoneme discrimination behavior based learning and self repairing neural networks

The Kelly Capital Growth Investment Criterion

2011

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International Edition - Investment Science B

2023-05-10

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Machine Learning: From Theory to Applications

1993-03-30

the study of euclidean distance matrices edms fundamentally asks what can be known geometrically given onlydistance information between points in euclidean space each point may represent simply locationor abstractly any entity expressible as a vector in finite dimensional euclidean space the answer to the question posed is that very much can be known about the points the mathematics of this combined study of geometry and optimization is rich and deep throughout we cite beacons of historical accomplishment the application of edms has already proven invaluable in discerning biological molecular conformation the emerging practice of localization in wireless sensor networks the global positioning system gps and distance based pattern recognitionwill certainly simplify and benefit from this theory we study the pervasive convex euclidean bodies and their various representations in particular we make convex polyhedra cones and dual cones more visceral through illustration andwe study the geometric relation of polyhedral cones to nonorthogonal bases biorthogonal expansion we explain conversion between halfspace and vertex descriptions of convex cones we provide formulae for determining dual cones and we show how classic alternative systems of linear inequalities or linear matrix inequalities and optimality conditions can be explained by generalized inequalities in terms of convex cones and their duals the conic analogue to linear independence called conic independence is introducedas a new tool in the study of classical cone theory the logical next step in the progression linear affine conic any convex optimization problem has geometric interpretation this is a powerful attraction the ability to visualize geometry of an optimization problem we provide tools to make visualization easier the concept of faces extreme points and extreme directions of convex euclidean bodiesis explained here crucial to understanding convex optimization the convex cone of positive semidefinite matrices in particular is studied in depth we mathematically interpret for example its inverse image under affine transformation and we explainhow higher rank subsets of its boundary united with its interior are convex the chapter on geometry of convex functions observes analogies between convex sets and functions the set of all vector valued convex functions is a closed convex cone included among the examples in this chapter we show how the real affinefunction relates to convex functions as the hyperplane relates to convex sets here also pertinent results formultidimensional convex functions are presented that are largely ignored in the literature tricks and tips for determining their convexityand discerning their geometry particularly with regard to matrix calculus which remains largely unsystematizedwhen compared with the traditional practice of ordinary calculus consequently we collect some results of matrix differentiation in the appendices the euclidean distance matrix edm is studied its properties and relationship to both positive semidefinite and gram matrices we relate the edm to the four classical axioms of the euclidean metric thereby observing the existence of an infinity of axioms of the euclidean metric beyondthe triangle inequality we proceed byderiving the fifth euclidean axiom and then explain why furthering this endeavoris inefficient because the ensuing criteria while describing polyhedra grow linearly in complexity and number some geometrical problems solvable via edms edm problems posed as convex optimization and methods of solution arepresented eg we generate a recognizable isotonic map of the united states usingonly comparative distance information no distance information only distance inequalities we offer a new proof of the classic schoenberg criterion that determines whether a candidate matrix is an edm our proofrelies on fundamental geometry assuming any edm must correspond to a list of points contained in some polyhedron possibly at its vertices and vice versa it is not widely known that the schoenberg criterion implies nonnegativity of the edm entries proved here we characterize the eigenvalues of an edm matrix and then devisea polyhedral cone required for determining membership of a candidate matrix in cayley menger form to the convex cone of euclidean distance matrices edm cone ie a candidate is an edm if and only if its eigenspectrum belongs to a spectral cone for edm n we will see spectral cones are not unique in the chapter edm cone we explain the geometric relationship betweenthe edm cone two positive semidefinite cones and the elliptope we illustrate geometric requirements in particular for projection of a candidate matrixon a positive semidefinite cone that establish its membership to the edm cone the faces of the edm cone are described but still open is the question whether all its faces are exposed as they are for the positive semidefinite cone the classic schoenberg criterion relating edm and positive semidefinite cones isrevealed to be a discretized membership relation a generalized inequality a new farkas like lemma between the edm cone and its ordinary dual a matrix criterion for membership to the dual edm cone is derived thatis simpler than the schoenberg criterion we derive a new concise expression for the edm cone and its dual involvingtwo subspaces and a positive semidefinite cone semidefinite programming is reviewedwith particular attention to optimality conditionsof prototypical primal and dual conic programs their interplay and the perturbation method of rank reduction of optimal solutions extant but not well known we show how to solve a ubiquitous platonic combinatorial optimization problem from linear algebra the optimal boolean solution x to ax b via semidefinite program relaxation a three dimensional polyhedral analogue for the positive semidefinite cone of 3x3 symmetricmatrices is introduced a tool for visualizing in 6 dimensions in edm proximity we explore methods of solution to a few fundamental and prevalenteuclidean distance matrix proximity problems the problem of finding that euclidean distance matrix closestto a given matrix in the euclidean sense we pay particular attention to the problem when compounded with rank minimization we offer a new geometrical proof of a famous result discovered by eckart young in 1936 regarding euclideanprojection of a point on a subset of the positive semidefinite cone comprising all positive semidefinite matriceshaving rank not exceeding a prescribed limit rho we explain how this problem is transformed to a convex optimization for any rank rho

What every engineer should know about risk engineering and management

2003-12-20

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2018-11

in recent years the study of difference equations has acquired a new significance due in large part to their use in the formulation and analysis of discrete time systems the numerical integration of differential equations by finite difference schemes and the study of deterministic chaos the second edition of difference equations theory and applications provides a thorough listing of all major theorems along with proofs the text treats the case of first order difference equations in detail using both analytical and geometrical methods both ordinary and partial difference equations are considered along with a variety of special nonlinear forms for which exact solutions can be determined numerous worked examples and problems allow readers to fully understand the material in the text they also give possible generalization of the theorems and application models the text s expanded coverage of application helps readers appreciate the benefits of using difference equations in the modeling and analysis of realistic problems from a broad range of fields the second edition presents analyzes and discusses a large number of applications from the mathematical biological physical and social sciences discussions on perturbation methods and difference equation models of differential equation models of differential equations represent contributions by the author to the research literature reference to original literature show how the elementary models of the book can be extended to more realistic situations difference equations second edition gives readers a background in discrete mathematics that many workers in science oriented industries need as part of their general scientific knowledge with its minimal mathematical background requirements of general algebra and calculus this unique volume will be used extensively by students and professional in science and technology in areas such as applied mathematics control theory population science economics and electronic circuits especially discrete signal processing

Convex Optimization & Euclidean Distance Geometry

2005

this monograph is intended for the designers and would be designers of secure and efficient wireless communication systems under intentional interference along with the widespread of wireless devices especially reconfigurable software defined radios jamming has become a serious threat to civilian communications in this book going beyond traditional communication system design that mainly focuses on accurate information transmission under benign environments we aim to enhance the physical layer security of communication systems by integrating modern cryptographic techniques into transceiver design so as to achieve secure high speed transmission under hostile interference with high reliability and efficiency we revisit existing jamming patterns and introduce new jamming patterns we analyze the weaknesses of existing anti jamming techniques we present innovative and feasible anti jamming techniques which can strengthen the inherent security of the 3g 4g and the upcoming 5g systems with minimal and inexpensive changes to the existing cdma frequency hopping and ofdm schemes we also provide benchmarks for system performance evaluation under various jamming scenarios through capacity analysis this book includes design principles in depth theoretical analysis and practical design examples and will be of interest to academic researchers as well as professionals in industry

Optimization of Large-scale Deterministic Systems Using Descriptor Variable Theory and Spatial Dynamic Programming

1978

a gripping insight into the digital debate over data ownership permanence and policy this is going on your permanent record is a threat that has never held more weight than it does in the internet age when information lasts indefinitely the ability to make good on that threat is as democratized as posting a tweet or making blog data about us is created shared collected analyzed and processed at an overwhelming scale the damage caused can be severe affecting relationships employment academic success and any number of other opportunities and it can also be long lasting one possible solution to this threat a digital right to be forgotten which would in turn create a legal duty to delete hide or anonymize information at the request of another user the highly controversial right has been criticized as a repugnant affront to principles of expression and access as unworkable as a technical measure and as effective as trying to put the cat back in the bag ctrl z breaks down the debate and provides guidance for a way forward it argues that the existing perspectives are too limited offering easy forgetting or none at all by looking at new theories of privacy and organizing the many potential applications of the right law and technology scholar meg leta jones offers a set of nuanced choices to help us choose she provides a digital information life cycle reflects on particular legal cultures and analyzes international interoperability in the end the right to be forgotten can be innovative liberating and globally viable

Microeconomic Theory

1995

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1988

difference equations theory applications and advanced topics third edition provides a broad introduction to the mathematics of difference equations and some of their applications many worked examples illustrate how to calculate both exact and approximate solutions to special classes of difference equations along with adding several advanced to

NASA Reference Publication

1985

gain new insights into why asset allocation works and learn advanced investing strategies you know that asset allocation requires much more than cookie cutter analysis you want precise detailed techniques for analyzing and applying asset allocation principles the high level applications oriented mastering the art of asset allocation examines the inner working of numerous asset allocation strategies and covers everything from ways to determine the portfolio value of various asset classes to insights into changing patterns of investment returns and standard deviations in different time periods and market environments

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2000-11

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Difference Equations, Second Edition

2022-02-17

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Wireless Communications under Hostile Jamming: Security and Efficiency

2018-10-10

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2016-03-29

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Difference Equations

2015-03-06

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Introduction to Linear and Nonlinear Programming

1973

Mastering the Art of Asset Allocation : Comprehensive Approaches to Managing Risk and Optimizing Returns

2006-09-21

Denshi Tsūshin Gakkai ronbunshi

1978

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1978

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2005-08

Python[illegible]

2004-03

Determining the State of a Linear System with Observers of Low Dynamic Order

1963

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2003

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2004-07

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2004-07-13

Linear And Nonlinear Programming, 2E

2008-02-01

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2006

Generalized Maximum Principle for Optimization

1965

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