# Free ebook Design optimization and vibration control of adaptive structures modeling of smart dampers and optimization in semiactive structures Full PDF

Adaptive Control Adaptive Dual Control Adaptive control Adaptive Control Optimal, Predictive, and Adaptive Control Adaptive Control Tutorial Nonlinear and Adaptive Control Design Robust and Adaptive Control Robust Adaptive Control Adaptive Control Adaptive Control of Underactuated Mechanical Systems Applications of Adaptive Control L1 Adaptive Control Theory Adaptive Methods for Control System Design Model Free Adaptive Control Adaptive Control Processes Adaptive Control Systems Adaptive Control Design and Analysis Adaptive Control Systems Adaptive Control Systems Safe Adaptive Control Adaptive Identification and Control of Uncertain Systems with Non-smooth Dynamics Stable Adaptive Control and Estimation for Nonlinear Systems Adaptive Control of Mechanical Manipulators Direct Adaptive Control Algorithms Adaptive Control Self-tuning and Adaptive Control Model Reference Adaptive Control Adaptive Approximation Based Control Mathematical Theory of Adaptive Control Learning-Based Adaptive Control Adaptive Filtering Prediction and Control Adaptive Fuzzy Systems and Control Adaptive Robust Control Systems Functional Adaptive Control System Identification for Self-adaptive Control Adaptive Inverse Control, Reissue Edition Nonlinear and Adaptive Control Systems Optimal Adaptive Control Systems by David Sworder Nonlinear Control Design

# *Adaptive Control*

2013-04-26

suitable for advanced undergraduates and graduate students this text introduces theoretical and practical aspects of adaptive control it offers an excellent perspective on techniques as well as an active knowledge of key approaches readers will acquire a well developed sense of when to use adaptive techniques and when other methods are more appropriate starting with a broad overview the text explores real time estimation self tuning regulators and model reference adaptive systems stochastic adaptive control and automatic tuning of regulators additional topics include gain scheduling robust high gain control and self oscillating controllers and suggestions for implementing adaptive controllers concluding chapters feature a summary of applications and a brief review of additional areas closely related to adaptive control both authors are professors at the lund institute of technology in sweden and this text has evolved from their many years of research and teaching their insights into properties design procedures and implementation of adaptive controllers are complemented by the numerous examples simulations and problems that appear throughout the book

# Adaptive Dual Control

2004-04-20

this monograph demonstrates how the performance of various well known adaptive controllers can be improved significantly using the dual effect the modifications to incorporate dual control are realized separately and independently of the main adaptive controller without complicating the algorithms a new bicriterial approach for dual control is developed and applied to various types of popular linear and nonlinear adaptive controllers practical applications of the designed controllers to several real time problems are presented this monograph is the first book providing a complete exposition on the dual control problem from the inception in the early 1960s to the present state of the art aiming at students and researchers in adaptive control as well as design engineers in industry

# Adaptive control

1979

this volume surveys the major results and techniques of analysis in the field of adaptive control focusing on linear continuous time single input single output systems the authors offer a clear conceptual presentation of adaptive methods enabling a critical evaluation of these techniques and suggesting avenues of further development 1989 edition

# Adaptive Control

2011-01-01

using a common unifying framework this volume explores the main topics of linear quadratic control predictive control and adaptive predictive control in terms of theoretical foundations analysis and design methodologies and application orient ed tools presents lq and lqg control via two alternative approaches the dynamic programming dp and the polynomial equation pe approach discusses predicable control an important tool in industrial applications within the framework of lq control and presents innovative predictive control schemes having guaranteed stability properties offers a unique thorough presentation of indirect adaptive multi step predictive controllers with detailed proofs of globally convergent schemes for both the ideal and the bounded disturbance case extends the self tuning property of one step ahead control to multi step control for engineers and mathematicians interested in the theory analysis and design methodologies and application oriented tools of optimal predictive and adaptive control

# Optimal, Predictive, and Adaptive Control

1995

presents the design analysis and application of a wide variety of algorithms that can be used to manage dynamical systems with unknown parameters

# Adaptive Control Tutorial

2006-01-01

using a pedagogical style along with detailed proofs and illustrative examples this book opens a view to the largely unexplored area of nonlinear systems with uncertainties the focus is on adaptive nonlinear control results introduced with the new recursive design methodology adaptive backstepping describes basic tools for nonadaptive backstepping design with state and output feedbacks

# Nonlinear and Adaptive Control Design

1995-06-14

robust and adaptive control shows the reader how to produce consistent and accurate controllers that operate in the presence of uncertainties and unforeseen events driven by aerospace applications the focus of the book is primarily on continuous dynamical systems the text is a three part treatment beginning with robust and optimal linear control methods and moving on to a self contained presentation of the design and analysis of model reference adaptive control mrac for nonlinear uncertain dynamical systems recent extensions and

modifications to mrac design are included as are guidelines for combining robust optimal and mrac controllers features of the text include case studies that demonstrate the benefits of robust and adaptive control for piloted autonomous and experimental aerial platforms detailed background material for each chapter to motivate theoretical developments realistic examples and simulation data illustrating key features of the methods described and problem solutions for instructors and matlab code provided electronically the theoretical content and practical applications reported address real life aerospace problems being based on numerous transitions of control theoretic results into operational systems and airborne vehicles that are drawn from the authors extensive professional experience with the boeing company the systems covered are challenging often open loop unstable with uncertainties in their dynamics and thus requiring both persistently reliable control and the ability to track commands either from a pilot or a guidance computer readers are assumed to have a basic understanding of root locus bode diagrams and nyquist plots as well as linear algebra ordinary differential equations and the use of state space methods in analysis and modeling of dynamical systems robust and adaptive control is intended to methodically teach senior undergraduate and graduate students how to construct stable and predictable control algorithms for realistic industrial applications practicing engineers and academic researchers will also find the book of great instructional value

# Robust and Adaptive Control

2012-11-13

this tutorial style presentation of the fundamental techniques and algorithms in adaptive control is designed to meet the needs of a wide audience without sacrificing mathematical depth or rigor the text explores the design analysis and application of a wide variety of algorithms that can be used to manage dynamical systems with unknown parameters topics include models for dynamic systems stability online parameter estimation parameter identifiers model reference adaptive control adaptive pole placement control and robust adaptive laws engineers and students interested in learning how to design stimulate and implement parameter estimators and adaptive control schemes will find that this treatment does not require a full understanding of the analytical and technical proofs this volume will also serve graduate students who wish to examine the analysis of simple schemes and discover the steps involved in more complex proofs advanced students and researchers will find it a guide to the grasp of long and technical proofs numerous examples demonstrating design procedures and the techniques of basic analysis enrich the text

# Robust Adaptive Control

2013-09-26

adaptive control is the control method used by a controller which must adapt to a controlled system with parameters which vary or are initially uncertain an adaptive control system utilizes on line identification of which either system parameter or controller parameter which does not

need a priori information about the bounds on these uncertain or time varying parameters these approaches consider their control design in the sense of lyapunov besides there are still some branches by combining adaptive control and other control methods i e nonlinear control methods intelligent control methods and predict control methods to name but a few addresses some original contributions reporting the latest advances in adaptive control it aims to gather the latest research on state of the art methods applications and research for the adaptive control theory and recent new findings obtained by the technique of adaptive control apparently the book cannot include all research topics different aspects of adaptive control are explored chapters includes some new tendencies and developments in research on a adaptive formation controller for multi robot systems l1 adaptive control design of the the longitudinal dynamics of a hypersonic vehicle model adaptive high gain control of biologically inspired receptor systems adaptive residual vibration suppression of sigid flexible coupled systems neuro hierarchical sliding mode control for under actuated mechanical systems neural network adaptive pid control design based on plc for a water level system and fuzzy based design of networked control systems with random time delays and packet dropout in the forward communication channel

# *Adaptive Control*

2018-03

in this book we collected recent results on the control of underactuated mechanical systems subject to internal uncertainties and external disturbances the strategy developed is so universal that it is not restricted to a specific system but a large class of underactuated systems several benchmark systems are studied in this book including detailed literature review system dynamics derivation control problem formulation and simulation verification the control strategy developed in chapter 4 is able to stabilize all these benchmark systems with satisfactory performance regardless of the underactuated dynamics and various uncertainties the book is written as a text suitable for graduate students in the advanced course for the control of underactuated systems it also provides valuable tools for researchers and practicing engineers working on the control of underactuated mechanical systems contents introductionpreliminariesunderactuated system dynamics and coordinate transformationcontroller designcart pole systemoverhead cranestora systemrotary inverted pendulumvibration absorberpendubotbibliographyindex readership graduate students researchers and academics in control engineering mechanical engineering electrical electronic engineering and optimization and control theory keywords adaptive control underactuated systems approximation technique

# Adaptive Control of Underactuated Mechanical Systems

2015-01-29

control applications of adaptive covers the proceedings of the 197 workshop on applications of adaptive control held in yale university this book is organized into five parts encompassing 18

chapters that summarize the potential application of adaptive control to many practical problems part i contains tutorials that bring together important result s in two of the most studied approaches to adaptive control namely self tuning regulators and model reference adaptive control mrac with a particular emphasis on the importance of error models in the stability analysis of mrac part ii examines the algorithms used for adaptive signal processing while part iii describes the types of power systems problems that could benefit from application of adaptive control and how to apply adaptive control algorithms for controlling large electric generators part iv highlights adaptive control in aircraft systems this part also considers how adaptive control fell into disfavor in the flight control community illustrating the existence of residual negative bias the desirability of cost elimination of air data sensors in less sophisticated flight control systems is also discussed part v addresses the application of process control to chemical processes and to electromechanical systems this part also shows the robustness and superior tracking and regulation properties of model reference adaptive control applied to liquid level control discussion on various classes of model reference adaptive controllers in a common framework from the viewpoint of microcomputer implementation is also included this book will be of value to control system theorists and practitioners

# Applications of Adaptive Control

2012-12-02

contains results not yet published in technical journals and conference proceedings

# L1 Adaptive Control Theory

2010-09-30

model free adaptive control theory and applications summarizes theory and applications of model free adaptive control mfac mfac is a novel adaptive control method for the unknown discrete time nonlinear systems with time varying parameters and time varying structure and the design and analysis of mfac merely depend on the measured input and ou

# Adaptive Methods for Control System Design

1986

the aim of this work is to present a unified approach to the modern field of control theory and to provide a technique for making problems involving deterministic stochastic and adaptive processes of both linear and nonlinear type amenable to machine solution mr bellman has used the theory of dynamic programming to formulate analyze and prepare these processes for numerical treatment by digital computers the unique concept of the book is that of a single problem stretching from recognition and formulation to analytic treatment and computational solution due to the emphasis upon ideas and concepts this book is equally suited for the pure

and applied mathematician and for control engineers in all fields originally published in 1961 the princeton legacy library uses the latest print on demand technology to again make available previously out of print books from the distinguished backlist of princeton university press these editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions the goal of the princeton legacy library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by princeton university press since its founding in 1905

# *Model Free Adaptive Control*

2013-09-24

this book describes the state of the art of adaptive control in particular with regard to realization with digital process computers microcomputers and personal computers it presents the fundamental principles through the design steps theoretical analysis simulation studies comparison software and hardware realization to real applications

# *Adaptive Control Processes*

2015-12-08

a systematic and unified presentation of the fundamentals of adaptive control theory in both continuous time and discrete time today adaptive control theory has grown to be a rigorous and mature discipline as the advantages of adaptive systems for developing advanced applications grow apparent adaptive control is becoming more popular in many fields of engineering and science using a simple balanced and harmonious style this book provides a convenient introduction to the subject and improves one s understanding of adaptive control theory adaptive control design and analysis features introduction to systems and control stability operator norms and signal convergence adaptive parameter estimation state feedback adaptive control designs parametrization of state observers for adaptive control unified continuous and discrete time adaptive control l1 a robustness theory for adaptive systems direct and indirect adaptive control designs benchmark comparison study of adaptive control designs multivariate adaptive control nonlinear adaptive control adaptive compensation of actuator nonlinearities end of chapter discussion problems and advanced topics as either a textbook or reference this self contained tutorial of adaptive control design and analysis is ideal for practicing engineers researchers and graduate students alike

# Adaptive Control Systems

1992

list of contributors preface adaptive internal model control an algorithm for robust adaptive control with less prior knowledge adaptive variable structure control indirect adaptive periodic

control adaptive stabilization of uncertain discrete time systems via switching control the method of localization adaptive nonlinear control passivation and small gain techniques active identification for control of discrete time uncertain nonlinear systems optimal adaptive tracking for nonlinear systems stable adaptive systems in the presence of nonlinear parametrization adaptive inverse for actuator compensation stable multi input multi output adaptive fuzzy neural control adaptive robust control scheme with an application to pm synchronous motors index

# *Adaptive Control Design and Analysis*

2003-07-09

impossible to access it has been widely scattered in papers reports and proceedings ofsymposia with different authors employing different symbols and terms but now thereis a book that covers all aspects of this dynamic topic in a systematic manner featuring consistent terminology and compatible notation and emphasizing unifiedstrategies adaptive control systems provides a comprehensive integrated accountof basic concepts analytical tools algorithms and a wide variety of application trendsand techniques adaptive control systems deals not only with the two principal approachesmodelreference adaptive control and self tuning regulators but also considers otheradaptive strategies involving variable structure systems reduced order schemes predictivecontrol fuzzy logic and more in addition it highlights a large number of practical applicationsin a range of fields from electrical to biomedical and aerospace engineering and includes coverage of industrial robots the book identifies current trends in the development of adaptive control systems delineates areas for further research and provides an invaluable bibliography of over1 200 references to the literature the first authoritative reference in this important area of work adaptive controlsystems is an essential information source for electrical and electronics r d chemical mechanical aerospace biomedical metallurgical marine transportation andpower plant engineers it is also useful as a text in professional society seminars and inhousetraining programs for personnel involved with the control of complex systems andfor graduate students engaged in the study of adaptive control systems

# Adaptive Control Systems

1999-06-08

safe adaptive control gives a formal and complete algorithm for assuring the stability of a switched control system when at least one of the available candidate controllers is stabilizing the possibility of having an unstable switched system even in the presence of a stabilizing candidate controller is demonstrated by referring to several well known adaptive control approaches where the system goes unstable when a large mismatch between the unknown plant and the available models exists plant model mismatch instability sufficient conditions for this possibility to be avoided are formulated and a recipe to be followed by the control system designer to guarantee stability and desired performance is provided the problem is placed in a standard optimization setting unlike the finite controller sets considered elsewhere the

candidate controller set is allowed to be continuously parametrized so that it can deal with plants with a very large range of uncertainties

# Adaptive Control Systems

2017-10-19

adaptive identification and control of uncertain systems with nonsmooth dynamics reports some of the latest research on modeling identification and adaptive control for systems with nonsmooth dynamics e g backlash dead zone friction saturation etc the authors present recent research results for the modelling and control designs of uncertain systems with nonsmooth dynamics such as friction dead zone saturation and hysteresis etc with particular applications in servo systems the book is organized into 19 chapters distributed in five parts concerning the four types of nonsmooth characteristics namely friction dead zone saturation and hysteresis respectively practical experiments are also included to validate and exemplify the proposed approaches this valuable resource can help both researchers and practitioners to learn and understand nonlinear adaptive control designs academics engineers and graduate students in the fields of electrical engineering control systems mechanical engineering applied mathematics and computer science can benefit from the book it can be also used as a reference book on adaptive control for servo systems for students with some background in control engineering explains the latest research outputs on modeling identification and adaptive control for systems with nonsmooth dynamics provides practical application and experimental results for robotic systems and servo motors

# Safe Adaptive Control

2011-02-10

thema dieses buches ist die anwendung neuronaler netze und fuzzy logic methoden zur identifikation und steuerung nichtlinear dynamischer systeme dabei werden fortgeschrittene konzepte der herkömmlichen steuerungstheorie mit den intuitiven eigenschaften intelligenter systeme kombiniert um praxisrelevante steuerungsaufgaben zu lösen die autoren bieten viel hintergrundmaterial ausgearbeitete beispiele und Übungsaufgaben helfen studenten und praktikern beim vertiefen des stoffes lösungen zu den aufgaben sowie matlab codebeispiele sind ebenfalls enthalten

# Adaptive Identification and Control of Uncertain Systems with Non-smooth Dynamics

2018-06-12

suitable either as a reference for practising engineers or as a text for a graduate course in adaptive control systems this is a self contained compendium of readily implementable adaptive

control algorithms these algorithms have been developed and applied by the authors for over fifteen years to a wide variety of engineering problems including flexible structure control blood pressure control and robotics as such they are suitable for a wide variety of multiple input output control systems with uncertainty and external disturbances the text is intended to enable anyone with knowledge of basic linear multivariable systems to adapt the algorithms to problems in a wide variety of disciplines thus in addition to developing the theoretical details of the algorithms presented the text gives considerable emphasis to designing algorithms and to representative applications in flight control flexible structure control robotics and drug infusion control this second edition makes good use of matlab programs for the illustrative examples these programs are described in the text and can be obtained from the mathworks file server

# Stable Adaptive Control and Estimation for Nonlinear Systems

2004-04-07

adaptive control second edition shows how a desired level of system performance can be maintained automatically and in real time even when process or disturbance parameters are unknown and variable it is a coherent exposition of the many aspects of this field setting out the problems to be addressed and moving on to solutions their practical significance and their application discrete time aspects of adaptive control are emphasized to reflect the importance of digital computers in the application of the ideas presented the second edition is thoroughly revised to throw light on recent developments in theory and applications with new chapters on multimodel adaptive control with switching direct and indirect adaptive regulation and adaptive feedforward disturbance compensation many algorithms are newly presented in matlab m file format to facilitate their employment in real systems classroom tested slides for instructors to use in teaching this material are also now provided all of this supplementary electronic material can be downloaded from fill in url the core material is also up dated and re edited to keep its perspective in line with modern ideas and more closely to associate algorithms with their applications giving the reader a solid grounding in synthesis and analysis of parameter adaptation algorithms recursive plant model identification in open and closed loop robust digital control for adaptive control robust parameter adaptation algorithms practical considerations and applications including flexible transmission systems active vibration control and broadband disturbance rejection and a supplementary introduction on hot dip galvanizing and a phosphate drying furnace control researchers and applied mathematicians will find adaptive control of significant and enduring interest and its use of example and application will appeal to practitioners working with unknown and variable parameter plant praise for the first edition well written interesting and easy to follow so that it constitutes a valuable addition to the monographies in adaptive control for discrete time linear systems suitable at least in part for use in graduate courses in adaptive control

# Adaptive Control of Mechanical Manipulators

1988

this work aiming to bring adaptive control theory closer to practice offers explanations rather than theory and draws upon several laboratory experiments for emphasis the first part of the book covers established subjects and the second covers solutions to some problems

# *Direct Adaptive Control Algorithms*

1997-11-25

a highly accessible and unified approach to the design and analysis of intelligent control systems adaptive approximation based control is a tool every control designer should have in his or her control toolbox mixing approximation theory parameter estimation and feedback control this book presents a unified approach designed to enable readers to apply adaptive approximation based control to existing systems and more importantly to gain enough intuition and understanding to manipulate and combine it with other control tools for applications that have not been encountered before the authors provide readers with a thought provoking framework for rigorously considering such questions as what properties should the function approximator have are certain families of approximators superior to others can the stability and the convergence of the approximator parameters be guaranteed can control systems be designed to be robust in the face of noise disturbances and unmodeled effects can this approach handle significant changes in the dynamics due to such disruptions as system failure what types of nonlinear dynamic systems are amenable to this approach what are the limitations of adaptive approximation based control combining theoretical formulation and design techniques with extensive use of simulation examples this book is a stimulating text for researchers and graduate students and a valuable resource for practicing engineers

# Adaptive Control

2011-06-06

the theory of adaptive control is concerned with construction of strategies so that the controlled system behaves in a desirable way without assuming the complete knowledge of the system the models considered in this comprehensive book are of markovian type both partial observation and partial information cases are analyzed while the book focuses on discrete time models continuous time ones are considered in the final chapter the book provides a novel perspective by summarizing results on adaptive control obtained in the soviet union which are not well known in the west comments on the interplay between the russian and western methods are also included

# Self-tuning and Adaptive Control

1981

adaptive control has been one of the main problems studied in control theory the subject is well understood yet it has a very active research frontier this book focuses on a specific subclass of adaptive control namely learning based adaptive control as systems evolve during time or are exposed to unstructured environments it is expected that some of their characteristics may change this book offers a new perspective about how to deal with these variations by merging together model free and model based learning algorithms the author demonstrates using a number of mechatronic examples how the learning process can be shortened and optimal control performance can be reached and maintained includes a good number of mechatronics examples of the techniques compares and blends model free and model based learning algorithms covers fundamental concepts state of the art research necessary tools for modeling and control

## Model Reference Adaptive Control

1992

this unified survey focuses on linear discrete time systems and explores the natural extensions to nonlinear systems in keeping with the importance of computers to practical applications the authors emphasize discrete time systems their approach summarizes the theoretical and practical aspects of a large class of adaptive algorithms 1984 edition

## Adaptive Approximation Based Control

2006-04-14

this volume develops a variety of adaptive fuzzy systems and applies them to a variety of engineering problems it summarizes the state of the art methods for automatic tuning of the parameters and structures of fuzzy logic systems

## Mathematical Theory of Adaptive Control

2006

this book focuses on the applications of robust and adaptive control approaches to practical systems the proposed control systems hold two important features 1 the system is robust with the variation in plant parameters and disturbances 2 the system adapts to parametric uncertainties even in the unknown plant structure by self training and self estimating the unknown factors the various kinds of robust adaptive controls represented in this book are composed of sliding mode control model reference adaptive control gain scheduling h infinity

model predictive control fuzzy logic neural networks machine learning and so on the control objects are very abundant from cranes aircrafts and wind turbines to automobile medical and sport machines combustion engines and electrical machines

# Learning-Based Adaptive Control

2016-08-02

unique in its systematic approach to stochastic systems this book presents a wide range of techniques that lead to novel strategies for effecting intelligent control of complex systems that are typically characterised by uncertainty nonlinear dynamics component failure unpredictable disturbances multi modality and high dimensional spaces

# Adaptive Filtering Prediction and Control

2009-05-21

a self contained introduction to adaptive inverse control now featuring a revised preface that emphasizes the coverage of both control systems and signal processing this reissued edition of adaptive inverse control takes a novel approach that is not available in any other book written by two pioneers in the field adaptive inverse control presents methods of adaptive signal processing that are borrowed from the field of digital signal processing to solve problems in dynamic systems control this unique approach allows engineers in both fields to share tools and techniques clearly and intuitively written adaptive inverse control illuminates theory with an emphasis on practical applications and commonsense understanding it covers the adaptive inverse control concept weiner filters adaptive lms filters adaptive modeling inverse plant modeling adaptive inverse control other configurations for adaptive inverse control plant disturbance canceling system integration multiple input multiple output mimo adaptive inverse control systems nonlinear adaptive inverse control systems and more complete with a glossary an index and chapter summaries that consolidate the information presented adaptive inverse control is appropriate as a textbook for advanced undergraduate and graduate level courses on adaptive control and also serves as a valuable resource for practitioners in the fields of control systems and signal processing

# Adaptive Fuzzy Systems and Control

1994

an adaptive system for linear systems with unknown parameters is a nonlinear system the analysis of such adaptive systems requires similar techniques to analyse nonlinear systems therefore it is natural to treat adaptive control as a part of nonlinear control systems nonlinear and adaptive control systems treats nonlinear control and adaptive controlin a unified framework presenting the major results at a moderate mathematical level suitable for msc

students and engineers with undergraduate degrees topics covered include introduction to nonlinear systems state space models describing functions forcommon nonlinear components stability theory feedback linearization adaptive control nonlinear observer design backstepping design disturbance rejection and output regulation and control applications including harmonic estimation and rejection inpower distribution systems observer and control design for circadian rhythms and discrete time implementation of continuous timenonlinear control laws

# Adaptive Robust Control Systems

2018-03-07

in this book we study theoretical and practical aspects of computing methods for mathematical modelling of nonlinear systems a number of computing techniques are considered such as methods of operator approximation with any given accuracy operator interpolation techniques including a non lagrange interpolation methods of system representation subject to constraints associated with concepts of causality memory and stationarity methods of system representation with an accuracy that is the best within a given class of models methods of covariance matrix estimation methods for low rank matrix approximations hybrid methods based on a combination of iterative procedures and best operator approximation and methods for information compression and filtering under condition that a filter model should satisfy restrictions associated with causality and different types of memory as a result the book represents a blend of new methods in general computational analysis and specific but also generic techniques for study of systems theory ant its particular branches such as optimal filtering and information compression best operator approximation non lagrange interpolation generic karhunen loeve transform generalised low rank matrix approximation optimal data compression optimal nonlinear filtering

# Functional Adaptive Control

2001-02-28

nonlinear control design presents a self contained introduction to nonlinear feedback control design for continuous time finite dimensional uncertain systems it deals with nonlinear systems affected by uncertainties such as unknown constant parameters time varying disturbances and uncertain nonlinearities both state feedback and output feedback are addressed differential geometric techniques are used to identify classes of nonlinear systems considered and to design feedback algorithms adaptive versions of these controls are developed in the presence of unknown parameters while robust versions are designed in the presence of time varying disturbances these control algorithms are applied to significant physical control problems from electric motor drives robotics aerospace power systems and are illustrated through worked examples the text is illustrated throughout with over 100 exercises more than 75 worked examples and 12 physical examples

# *System Identification for Self-adaptive Control*

1970

# Adaptive Inverse Control, Reissue Edition

2008-02-08

# *Nonlinear and Adaptive Control Systems*

2013-04-04

# Optimal Adaptive Control Systems by David Sworder

1966-01-01

# <u>Nonlinear Control Design</u>

1995-01-01

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