Analysis Design Of Control Systems Using Matlab

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Computational Aids in Control Systems Using MATLAB Hadi Saadat 1993 Accompanying computer disk contains functions and examples developed by the author.
Digital Control Applications Illustrated with MATLAB Hemchandra Madhusudan Shertukde 2015-02-13 Digital Control Applications Illustrated with MATLAB covers the modeling, analysis, and design of linear discrete control systems. Illustrating all topics using the micro-computer implementation of digital controllers aided by MATLAB, Simulink, and FEEDBACK
Linear Feedback Control Dingyu Xue 2007-01-01 This book discusses analysis and design techniques for linear feedback control systems using MATLAB® software. By reducing the mathematics, increasing MATLAB working examples, and inserting short scripts and plots within the text, the authors have created a resource suitable for almost any type of user. The book begins with a summary of the properties of linear systems and addresses modeling and model reduction issues. In the subsequent chapters on analysis, the authors introduce time domain, complex plane, and frequency domain techniques. Their coverage of design includes discussions on model-based controller designs, PID controllers, and robust control designs. A unique aspect of the book is its inclusion of a chapter on fractional-order controllers, which are useful in control engineering practice.
Control Tutorials for MATLAB and Simulink William C. Messner 1998 Designed to help learn how to use MATLAB and Simulink for the analysis and design of automatic control systems.
Digital Control Engineering M. Sami Fadali 2012-08-21 Digital controllers are part of nearly all modern personal, industrial, and transportation systems. Every senior or graduate student of electrical, chemical or mechanical engineering should therefore be familiar with the basic theory of digital controllers. This new text covers the fundamental principles and applications of digital control engineering, with emphasis on engineering design. Fadali and Visioli cover analysis and design of digitally controlled systems and describe applications of digital controls in a wide range of fields. With worked examples and Matlab applications in every chapter and many end-of-chapter assignments, this text provides both theory and practice for those coming to digital control engineering for the first time, whether as a student or practicing engineer. Extensive Use of computational tools: Matlab sections at end of each chapter show how to implement concepts from the chapter Frees the student from the drudgery of mundane calculations and allows him to consider more subtle aspects of control system analysis and design An engineering approach to digital controls: emphasis throughout the book is on design of control systems. Mathematics is used to help explain concepts, but throughout the text discussion is tied to design and implementation. For example coverage of analog controls in chapter 5 is not simply a review, but is used to show how analog control systems map to digital control systems Review of Background Material: contains review material to aid understanding of digital control analysis and design. Examples include discussion of discrete-time systems in time domain and frequency domain (reviewed from linear systems course) and root locus design in s-domain and z-domain (reviewed from feedback control course) Inclusion of Advanced Topics In addition to the basic topics required for a one semester senior/graduate class, the text includes some advanced material to make it suitable for an introductory graduate level class or for two quarters at the senior/graduate level. Examples of optional topics are state-space methods, which may receive brief coverage in a one semester course, and nonlinear discrete-time systems Minimal Mathematics Prerequisites The mathematics background required for understanding most of the book is based on what can be reasonably expected from the average electrical, chemical or mechanical engineering senior. This background includes three semesters of calculus, differential equations and basic linear algebra. Some texts on digital control require more
Introduction to Control Engineering Ajit K. Mandal 2006-01-01 The Text Is Written From The Engineer'S Point Of View To Explain The Basic Oncepts Involved In Feedback Control Theory. The Material In The Text Has Been Organized For Gradual And Sequential Development Of Control Theory Starting With A Statement Of The Task Of A Control Engineer At The Very Outset. The Book Is Tended For An Introductory Undergraduate Course In Control Systems For Engineering Students.This Text Presents A Comprehensive Analysis And Design Of Continuous-Time Control Systems And Includes More Than Introductory Material For Discrete Systems With Adequate Guidelines To Extend The Results Derived In Connection Continuous-Time Systems. The Prerequisite For The Reader Is Some Elementary Owledge Of Differential Equations, Vector-Matrix Analysis And Mechanics. Transfer Function And State Variable Models Of Typical Components And Subsystems Have Been Derived In The Appendix At The End Of The Book.Most Of The Materials Including Solved And Unsolved Problems Presented In The Book Have Been Class-Tested In Senior Undergraduates And First Year Graduate El Courses In The Field Of Control Systems At The Electronics And Telecommunication Engineering Department, Jadavpur University. Matlab Is The Most Widely Used Cad Software Package In Universities Throughout The World. Some Representative Matlab Scripts Used For Solving Problems Are Cluded At The End Of Each Chapter. The Detailed Design Steps Of Fuzzy Logic Based Controller Using Simulink And Matlab Has Been Provided In The Book To Give The Student A Head Start In This Emerging Discipline.A Chapter Has Been Included To Deal With Nonlinear Components And Their Analysis G Matlab And Simulink Through User Defined S-Functions. Finally, A Chapter Has Been Included To Deal With The Implementation Of Digital Controllers On Finite Bit Computer, To Bring Out The Problems Associated With Digital Trollers. In View Of Extensive Use Of Matlab For Rapid Verification Of Controller Designs, Some Notes For Using Matlab Script M-Files And Function M-Files Are Included At The End Of The Book.
Using MATLAB to Analyze and Design Control Systems Naomi Ehrich Leonard 1995 Symbolic dynamics is a rapidly growing area of dynamical systems. Although it originated as a method to study general dynamical systems, it has found significant uses in coding for data storage and transmission as well as in linear algebra. This book is the first general textbook on symbolic dynamics and its applications to coding. Mathematical prerequisites are relatively modest (mainly linear algebra at the undergraduate level) especially for the first half of the book. Topics are carefully developed and motivated with many examples, and there are over 500 exercises to test the reader's understanding. The last chapter contains a survey of more advanced topics, and a comprehensive bibliography is included. This book will serve as an introduction to symbolic dynamics for advanced undergraduate students in mathematics, engineering, and computer science.
MATLAB Control Systems Engineering Cesar Lopez 2014-09-22 MATLAB is a high-level language and environment for numerical computation, visualization, and programming. Using MATLAB, you can analyze data, develop algorithms, and create models and applications. The language, tools, and built-in math functions enable you to explore multiple approaches and reach a solution faster than with spreadsheets or traditional programming languages, such as C/C++ or Java. MATLAB Control Systems Engineering introduces you to the MATLAB language with practical hands-on instructions and results, allowing you to quickly achieve your goals. In addition to giving an introduction to the MATLAB environment and MATLAB programming, this book provides all the material needed to design and analyze control systems using MATLAB's specialized Control Systems Toolbox. The Control Systems Toolbox offers an extensive range of tools for classical and modern control design. Using these tools you can create models of linear time-invariant systems in transfer function, zero-pole-gain or state space format. You can manipulate both discrete-time and continuous-time systems and convert between various representations. You can calculate and graph time response, frequency response and loci of roots. Other functions allow you to perform pole placement, optimal control and estimates. The Control System Toolbox is open and extendible, allowing you to create customized M-files to suit your specific applications.
Design of Embedded Robust Control Systems Using MATLAB® / Simulink® Petko Hristov Petkov 2018 The aim of this book is to present the theoretical and practical aspects of embedded robust control design and implementation with the aid of MATLAB(R) and SIMULINK(R). It covers methods suitable for practical implementations, combining knowledge from control system design and computer engineering to describe the entire design cycle.
Robust Control Design with MATLAB® Da-Wei Gu 2005-06-20 Shows readers how to exploit the capabilities of the MATLAB® Robust Control and Control Systems Toolboxes to the fullest using practical robust control examples.
Feedback Systems Karl Johan Åström 2021-02-02 The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström and Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types of problems that can be solved using feedback Includes a new chapter on fundamental limits and new material on the Routh-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students Indispensable for researchers seeking a self-contained resource on control theory
Multivariable Feedback Control: Analysis and Design Sigurd Skogestad 2014
LMIs in Control Systems Guang-Ren Duan 2013-06-17 Although LMI has emerged as a powerful tool with applications across the major domains of systems and control, there has been a need for a textbook that provides an accessible introduction to LMIs in control systems analysis and design. Filling this need, LMIs in Control Systems: Analysis, Design and Applications focuses on the basic analysis and d
Matlab for Control Engineers Katsuhiko Ogata 2007 Notable author Katsuhiko Ogata presents the only new book available to discuss, in sufficient detail, the details of MATLAB® materials needed to solve many analysis and design problems associated with control systems. Complements a large number of examples with in-depth explanations, encouraging complete understanding of the MATLAB approach to solving problems. Distills the large volume of MATLAB information available to focus on those materials needed to study analysis and design problems of deterministic, continuous-time control systems. Covers conventional control systems such as transient response, root locus, frequency response analyses and designs; analysis and design problems associated with state space formulation of control systems; and useful MATLAB approaches to solve optimization problems. A useful self-study guide for practicing control engineers.
Nonlinear Control Systems using MATLAB® Mourad Boufadene 2018-09-24 The development of computer software for nonlinear control systems has provided many benefits for teaching, research, and the development of control systems design. MATLAB is considered the dominant software platforms for linear and nonlinear control systems analysis. This book provides an easy way to learn nonlinear control systems such as feedback linearization technique and Sliding mode control (Structure variable control) which are one of the most used techniques in nonlinear control dynamical systems; therefore teachers-students and researchers are all in need to handle such techniques; and since they are too difficult for them to handle such nonlinear controllers especially for a more complicated systems such as induction motor, satellite, and vehicles dynamical models. Thus, this document it is an excellent resource for learning the principle of feedback linearization and sliding mode techniques in an easy and simple way: Provides a briefs description of the feedback linearization and sliding mode control strategies Includes a simple method on how to determine the right and appropriate controller (P-PI-PID) for feedback linearization control strategy. A Symbolic MATLAB Based function for finding the feedback linearization and sliding mode controllers are developed and tested using several examples. A simple method for finding the approximate sliding mode controller parameters is introduced Where the program used to construct the nonlinear controller uses symbolic computations; such that the user should provide the program with the necessary functions f(x), g(x) and h(x) using the symbolic library.
Linear Control System Analysis and Design with MATLAB®, Sixth Edition Constantine H. Houpis 2013-10-30 Thoroughly classroom-tested and proven to be a valuable self-study companion, Linear Control System Analysis and Design: Sixth Edition provides an intensive overview of modern control theory and conventional control system design using in-depth explanations, diagrams, calculations, and tables. Keeping mathematics to a minimum, the book is designed with the undergraduate in mind, first building a foundation, then bridging the gap between control theory and its real-world application. Computer-aided design accuracy checks (CADAC) are used throughout the text to enhance computer literacy. Each CADAC uses fundamental concepts to ensure the viability of a computer solution. Completely updated and packed with student-friendly features, the sixth edition presents a range of updated examples using MATLAB®, as well as an appendix listing MATLAB functions for optimizing control system analysis and design. Over 75 percent of the problems presented in the previous edition have been revised or replaced.
Linear Control System Analysis and Design Constantine H. Houpis 2003-08-14 Thoroughly classroom-tested and proven to be a valuable self-study companion, Linear Control System Analysis and Design: Fifth Edition uses in-depth explanations, diagrams, calculations, and tables, to provide an intensive overview of modern control theory and conventional control system design. The authors keep the mathematics to a minimum while stressing real-world engineering challenges. Completely updated and packed with student-friendly features, the Fifth Edition presents a wide range of examples using MATLAB® and TOTAL-PC, as well as an appendix listing MATLAB functions for optimizing control system analysis and design. Eighty percent of the problems presented in the previous edition have been revised to further reinforce concepts necessary for current electrical, aeronautical, astronautical, and mechanical applications.
Modeling, Analysis and Design of Control Systems in MATLAB and Simulink Dingyü Xue 2014-09 MATLAB and Simulink are now being used extensively in not only academia as a teaching aid, a learning aid and a research tool but also industry for modeling, analysis, design and rapid prototyping. As a response, Modeling, Analysis and Design of Control Systems in MATLAB and Simulink emphasizes on practical use of and problem solving in MATLAB and Simulink following the so-called MAD (modeling, analysis and design) notion. Readers can not only learn the control concepts and problem solving methods but also coding skills by following the numerous inline MATLAB scripts, functions, reproducible examples as well as chapter-end Problems. The book service website http://mechatronics.ucmerced.edu/MADbook contains Solution Manual, 1,000 plus teaching/learning PPTs, and all related codes used in the book for reproducing the examples.Modeling, Analysis and Design of Control Systems in MATLAB and Simulink has 12 chapters organized in 5 parts: Foundation, Modeling, Analysis, Design and Rapid Prototyping. Each chapter ends with Problems section. This book can be used as a reference text in the introductory control course for undergraduates in all engineering schools. The coverage of topics is broad, yet balanced, and it should provide a solid foundation for the subsequent control engineering practice in both industry and research institutes. This book will be a good desktop reference for control engineers and many codes and tools in this book may be directly applicable in real world problem solving.
Modern Control Systems Analysis and Design Using MATLAB Robert H. Bishop 1993 Designed to help learn how to use MATLAB and Simulink for the analysis and design of automatic control systems.
Modern Control Systems Analysis and Design Walter J. Grantham 1993-01-26 An introduction to analysis techniques used in the design of linear feedback control systems with emphasis on both classical and matrix methods. This text presents all design methods in a building-block sequence, including a thorough analysis of first- and second-order systems as well as general state space systems.
System Design through Matlab®, Control Toolbox and Simulink® Krishna K. Singh 2012-12-06 MATLAB is a powerful, versatile, and interactive software for scientific and technical computations, including simulations. Specialized toolboxes provided with built-in functions are a special feature of MATLAB. This book aims at getting the reader started with computations and simulations in system engineering quickly and easily and then proceeds to build concepts for advanced computations and simulations that include the control and compensation of systems. Simulation through SIMULINK has also been described to allow the reader to get the feel of the real world situation.
MATLAB Simulations for Radar Systems Design Bassem R. Mahafza 2003-12-17 Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req
Feedback Control Problems Dean K. Frederick 1995 This short book contains a large number of MATLAB-based problems dealing with the topics covered in a first course on feedback control. The ways in which MATLAB can be used to solve these problems are illustrated by detailed examples that lead the reader through the analytical steps of the solution and in many cases give a script of MATLAB commands. A number of simplified models of real-world systems are presented and used in the problems and what- if variations. This book is intended to serve as a supplement to one of the many feedback control textbooks available.
Analysis and design of control systems using MATLAB Rao V. Dukkipati 2006
Design and Analysis of Control Systems Arthur G.O. Mutambara 2017-12-14 Written to inspire and cultivate the ability to design and analyze feasible control algorithms for a wide range of engineering applications, this comprehensive text covers the theoretical and practical principles involved in the design and analysis of control systems. From the development of the mathematical models for dynamic systems, the author shows how they are used to obtain system response and facilitate control, then addresses advanced topics, such as digital control systems, adaptive and robust control, and nonlinear control systems.
Modern Control Design Ashish Tewari 2002-04-03 In this book, Tewari emphasizes the physical principles and engineering applications of modern control system design. Instead of detailing the mathematical theory, MATLAB examples are used throughout.
Designing Linear Control Systems with MATLAB Katsuhiko Ogata 1994 Written as a companion volume to the author's Solving Control Engineering Problems with MATLAB, this indispensable guide illustrates the power of MATLAB as a tool for synthesizing control systems, emphasizing pole placement, and optimal systems design.
PID and Predictive Control of Electrical Drives and Power Converters using MATLAB / Simulink Liuping Wang 2014-12-17 A timely introduction to current research on PID andpredictive control by one of the leading authors on thesubject PID and Predictive Control of Electric Drives and PowerSupplies using MATLAB/Simulink examines the classical controlsystem strategies, such as PID control, feed-forward control andcascade control, which are widely used in current practice. The authors share their experiences in actual design andimplementation of the control systems on laboratory test-beds,taking the reader from the fundamentals through to moresophisticated design and analysis. The bookcontains sections on closed-loop performance analysis in bothfrequency domain and time domain, presented to help the designer inselection of controller parameters and validation of the controlsystem. Continuous-time model predictive control systems aredesigned for the drives and power supplies, and operationalconstraints are imposed in the design. Discrete-time model predictive control systems are designed basedon the discretization of the physical models, which will appeal toreaders who are more familiar with sampled-data control system.Soft sensors and observers will be discussed for low costimplementation. Resonant control of the electric drives andpower supply will be discussed to deal with the problems of bias insensors and unbalanced three phase AC currents. Brings together both classical control systems and predictivecontrol systems in a logical style from introductory through toadvanced levels Demonstrates how simulation and experimental results are usedto support theoretical analysis and the proposed designalgorithms MATLAB and Simulink tutorials are given in each chapter to showthe readers how to take the theory to applications. Includes MATLAB and Simulink software using xPC Target forteaching purposes A companion website is available Researchers and industrial engineers; and graduate students onelectrical engineering courses will find this a valuableresource.
Control System Analysis & Design in MATLAB and SIMULINK Mohammad Nuruzzaman 2014-06-20 "Control System Analysis & Design in MATLAB and SIMULINK" is blueprinted to solve undergraduate control system engineering problems in MATLAB platform. Unified view of control system fundamentals is taken into account in the text. One key aspect of the text is the presentation of computing and graphing materials in a simple intuitive way. Many advances in virtual implementation on control systems have been seen in the past decade. The text elucidates the web of concepts underpinning these advances. Self-working out illustrations and end-of-chapter exercises enthuse the reader a checkup on thorough understanding. The comprehensive introduction will benefit both undergraduates and graduates studying control system and engineering. Also researchers in the field can have the text as reference.
PID Control System Design and Automatic Tuning using MATLAB/Simulink Liuping Wang 2020-04-06 Covers PID control systems from the very basics to the advanced topics This book covers the design, implementation and automatic tuning of PID control systems with operational constraints. It provides students, researchers, and industrial practitioners with everything they need to know about PID control systems—from classical tuning rules and model-based design to constraints, automatic tuning, cascade control, and gain scheduled control. PID Control System Design and Automatic Tuning using MATLAB/Simulink introduces PID control system structures, sensitivity analysis, PID control design, implementation with constraints, disturbance observer-based PID control, gain scheduled PID control systems, cascade PID control systems, PID control design for complex systems, automatic tuning and applications of PID control to unmanned aerial vehicles. It also presents resonant control systems relevant to many engineering applications. The implementation of PID control and resonant control highlights how to deal with operational constraints. Provides unique coverage of PID Control of unmanned aerial vehicles (UAVs), including mathematical models of multi-rotor UAVs, control strategies of UAVs, and automatic tuning of PID controllers for UAVs Provides detailed descriptions of automatic tuning of PID control systems, including relay feedback control systems, frequency response estimation, Monte-Carlo simulation studies, PID controller design using frequency domain information, and MATLAB/Simulink simulation and implementation programs for automatic tuning Includes 15 MATLAB/Simulink tutorials, in a step-by-step manner, to illustrate the design, simulation, implementation and automatic tuning of PID control systems Assists lecturers, teaching assistants, students, and other readers to learn PID control with constraints and apply the control theory to various areas. Accompanying website includes lecture slides and MATLAB/ Simulink programs PID Control System Design and Automatic Tuning using MATLAB/Simulink is intended for undergraduate electrical, chemical, mechanical, and aerospace engineering students, and will greatly benefit postgraduate students, researchers, and industrial personnel who work with control systems and their applications.
Intelligent Control Design and MATLAB Simulation Jinkun Liu 2017-09-20 This book offers a comprehensive introduction to intelligent control system design, using MATLAB simulation to verify typical intelligent controller designs. It also uses real-world case studies that present the results of intelligent controller implementations to illustrate the successful application of the theory. Addressing the need for systematic design approaches to intelligent control system design using neural network and fuzzy-based techniques, the book introduces the concrete design method and MATLAB simulation of intelligent control strategies; offers a catalog of implementable intelligent control design methods for engineering applications; provides advanced intelligent controller design methods and their stability analysis methods; and presents a sample simulation and Matlab program for each intelligent control algorithm. The main topics addressed are expert control, fuzzy logic control, adaptive fuzzy control, neural network control, adaptive neural control and intelligent optimization algorithms, providing several engineering application examples for each method.
International Journal of System Dynamics Applications Ahmad Taher Azar 2014
Analysis and Design of Control Systems Using MATLAB R. V. Dukkipati 2006-07-11 KEY FEATURES: -Step by step explanations guide through the complex material involving a diverse variety of concepts. -Proper allocation and extensive use and application of MATLAB. -Detailed illustrations of solution methods save a lot of time and effort in understanding problems and theoretical concepts. ABOUT THE BOOK: The book Analysis and Design of Control Systems using MATLAB, is designed as a supplement to an introductory course in feedback control systems for undergraduate or graduate engineering students of all disciplines. Feedback control systems engineering is a multidisciplinary subject and presents a control engineering methodology based on mathematical fundamentals and stresses physical system modeling. This book includes the coverage of classical methods of control systems engineering: introduction to control systems, matrix analysis, Laplace transforms, mathematical modeling of dynamic systems, control system representation, performance and stability of feedback systems, analysis and design of feedback control systems, state space analysis and design, MATLAB basics and MATLAB tutorial. The numerous worked examples offer detailed explanations, and guide the students through each set of problems to enable them to save a great deal of time and effort in arriving at an understanding of problems in this subject. Extensive references to guide the students to further sources of information on control systems and MATLAB is provided. In addition to students, practising engineers will also find this book immensely useful.
Digital Control System Analysis and Design Charles L. Phillips 1990
Advanced Control Engineering Roland Burns 2001-11-07 Advanced Control Engineering provides a complete course in control engineering for undergraduates of all technical disciplines. Included are real-life case studies, numerous problems, and accompanying MatLab programs.
Modeling, Analysis, Design, and Control of Stochastic Systems V. G. Kulkarni 2014-01-13 An introductory level text on stochastic modelling, suited for undergraduates or graduates in actuarial science, business management, computer science, engineering, operations research, public policy, statistics, and mathematics. It employs a large number of examples to show how to build stochastic models of physical systems, analyse these models to predict their performance, and use the analysis to design and control them. The book provides a self-contained review of the relevant topics in probability theory: In discrete and continuous time Markov models it covers the transient and long term behaviour, cost models, and first passage times; under generalised Markov models, it covers renewal processes, cumulative processes and semi-Markov processes. All the material is illustrated with many examples, and the book emphasises numerical answers to the problems. A software package called MAXIM, which runs on MATLAB, is available for downloading.
Control System Analysis and Identification with MATLAB® Anish Deb 2018-10-09 Key Features: The Book Covers recent results of the traditional block pulse and other functions related material Discusses 'functions related to block pulse functions' extensively along with their applications Contains analysis and identification of linear time-invariant systems, scaled system, and sampled-data system Presents an overview of piecewise constant orthogonal functions starting from Haar to sample-and-hold function Includes examples and MATLAB codes with supporting numerical exampless.
Computer-Aided Control Systems Design Cheng Siong Chin 2017-12-19 Computer-Aided Control Systems Design: Practical Applications Using MATLAB® and Simulink® supplies a solid foundation in applied control to help you bridge the gap between control theory and its real-world applications. Working from basic principles, the book delves into control systems design through the practical examples of the ALSTOM gasifier system in power stations and underwater robotic vehicles in the marine industry. It also shows how powerful software such as MATLAB® and Simulink® can aid in control systems design. Make Control Engineering Come Alive with Computer-Aided Software Emphasizing key aspects of the design process, the book covers the dynamic modeling, control structure design, controller design, implementation, and testing of control systems. It begins with the essential ideas of applied control engineering and a hands-on introduction to MATLAB and Simulink. It then discusses the analysis, model order reduction, and controller design for a power plant and the modeling, simulation, and control of a remotely operated vehicle (ROV) for pipeline tracking. The author explains how to obtain the ROV model and verify it by using computational fluid dynamic software before designing and implementing the control system. In addition, the book details the nonlinear subsystem modeling and linearization of the ROV at vertical plane equilibrium points. Throughout, the author delineates areas for further study. Appendices provide additional information on various simulation models and their results. Learn How to Perform Simulations on Real Industry Systems A step-by-step guide to computer-aided applied control design, this book supplies the knowledge to help you deal with control problems in industry. It is a valuable reference for anyone who wants a better understanding of the theory and practice of basic control systems design, analysis, and implementation.
MATLAB Tools for Control System Analysis and Design Duane C. Hanselman 1995 Disk includes: a set of MATLAB M-files called the Control System Analysis and Design Toolbox, or CSAD Toolbox.
Linear Control System Analysis and Design Constantine H. Houpis 1988-01-01