



Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering)

Huagang Zhang, Derong Liu, Yanhong Luo, Ding Wang

Download now

[Click here](#) if your download doesn't start automatically

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering)

Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang

There are many methods of stable controller design for nonlinear systems. In seeking to go beyond the minimum requirement of stability, Adaptive Dynamic Programming in Discrete Time approaches the challenging topic of optimal control for nonlinear systems using the tools of adaptive dynamic programming (ADP). The range of systems treated is extensive; affine, switched, singularly perturbed and time-delay nonlinear systems are discussed as are the uses of neural networks and techniques of value and policy iteration. The text features three main aspects of ADP in which the methods proposed for stabilization and for tracking and games benefit from the incorporation of optimal control methods:

- infinite-horizon control for which the difficulty of solving partial differential Hamilton–Jacobi–Bellman equations directly is overcome, and proof provided that the iterative value function updating sequence converges to the infimum of all the value functions obtained by admissible control law sequences;
- finite-horizon control, implemented in discrete-time nonlinear systems showing the reader how to obtain suboptimal control solutions within a fixed number of control steps and with results more easily applied in real systems than those usually gained from infinite-horizon control;
- nonlinear games for which a pair of mixed optimal policies are derived for solving games both when the saddle point does not exist, and, when it does, avoiding the existence conditions of the saddle point.

Non-zero-sum games are studied in the context of a single network scheme in which policies are obtained guaranteeing system stability and minimizing the individual performance function yielding a Nash equilibrium.

In order to make the coverage suitable for the student as well as for the expert reader, Adaptive Dynamic Programming in Discrete Time:

- establishes the fundamental theory involved clearly with each chapter devoted to a clearly identifiable control paradigm;
- demonstrates convergence proofs of the ADP algorithms to deepen understanding of the derivation of stability and convergence with the iterative computational methods used; and
- shows how ADP methods can be put to use both in simulation and in real applications.

This text will be of considerable interest to researchers interested in optimal control and its applications in operations research, applied mathematics computational intelligence and engineering. Graduate students working in control and operations research will also find the ideas presented here to be a source of powerful methods for furthering their study.

 [Download Adaptive Dynamic Programming for Control: Algorith ...pdf](#)

 [Read Online Adaptive Dynamic Programming for Control: Algori ...pdf](#)

Download and Read Free Online Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang

From reader reviews:

Jeffrey Primo:

Playing with family inside a park, coming to see the sea world or hanging out with good friends is thing that usually you might have done when you have spare time, then why you don't try factor that really opposite from that. One particular activity that make you not feeling tired but still relaxing, trilling like on roller coaster you have been ride on and with addition of information. Even you love Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering), you could enjoy both. It is very good combination right, you still would like to miss it? What kind of hang type is it? Oh come on its mind hangout people. What? Still don't get it, oh come on its referred to as reading friends.

William Oden:

On this era which is the greater man or woman or who has ability to do something more are more precious than other. Do you want to become certainly one of it? It is just simple method to have that. What you are related is just spending your time not very much but quite enough to possess a look at some books. One of many books in the top list in your reading list is usually Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering). This book which is qualified as The Hungry Slopes can get you closer in turning out to be precious person. By looking upwards and review this book you can get many advantages.

Jessica Adkins:

You can obtain this Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by go to the bookstore or Mall. Only viewing or reviewing it may to be your solve problem if you get difficulties for your knowledge. Kinds of this book are various. Not only by means of written or printed but in addition can you enjoy this book simply by e-book. In the modern era just like now, you just looking of your mobile phone and searching what their problem. Right now, choose your current ways to get more information about your guide. It is most important to arrange yourself to make your knowledge are still revise. Let's try to choose appropriate ways for you.

Elizabeth Black:

Do you like reading a reserve? Confuse to looking for your selected book? Or your book has been rare? Why so many query for the book? But almost any people feel that they enjoy with regard to reading. Some people likes reading through, not only science book but in addition novel and Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) or even others sources were given information for you. After you know how the great a book, you feel want to read more and more. Science publication was created for teacher or perhaps students especially. Those books are helping them to put their knowledge. In some other case, beside science book, any other book likes Adaptive Dynamic

Programming for Control: Algorithms and Stability (Communications and Control Engineering) to make your spare time much more colorful. Many types of book like here.

Download and Read Online Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang #F8HEA0C7TPG

Read Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang for online ebook

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang books to read online.

Online Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang ebook PDF download

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang Doc

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang Mobipocket

Adaptive Dynamic Programming for Control: Algorithms and Stability (Communications and Control Engineering) by Huaguang Zhang, Derong Liu, Yanhong Luo, Ding Wang EPub