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	Titolo	Adaptive Dynamic Programming: Single and Multiple Controllers [[electronic resource] /] / by Ruizhuo Song, Qinglai Wei, Qing Li
	Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2019
	ISBN	981-13-1712-7
	Edizione	[1st ed. 2019.]
	Descrizione fisica	1 online resource (XV, 271 p. 126 illus., 98 illus. in color.)
	Collana	Studies in Systems, Decision and Control, , 2198-4182 ; ; 166
	Disciplina	629.8
	Soggetti	Engineering Vibration Control and Systems Theory Computational Intelligence Vibration, Dynamical Systems, Control
	Lingua di pubblicazione	Inglese
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	Livello bibliografico	Monografia
	Nota di contenuto	Part I: Preparation -- Introduction to optimal control and adaptive dynamic programming -- Neural networks implementation -- Part II: Optimal control for system with single controller -- Finite-time optimal control -- Multi-objective optimal control -- Multiple actor-critic optimal control via ADP -- Optimal control for complex-valued nonlinear systems -- Chaotic systems optimal tracking control -- Part III: Multi-player systems games -- Optimal control for unknown systems with disturbances -- Zero-sum differential games -- Non-Zero-Sum games -- Synchronization control for multi-agent games.
	Sommario/riassunto	This book presents a class of novel optimal control methods and games schemes based on adaptive dynamic programming techniques. For systems with one control input, the ADP-based optimal control is designed for different objectives, while for systems with multi-players, the optimal control inputs are proposed based on games. In order to verify the effectiveness of the proposed methods, the book analyzes the properties of the adaptive dynamic programming methods, including convergence of the iterative value functions and the stability of the system under the iterative control laws. Further, to substantiate the mathematical analysis, it presents various application examples,

which provide reference to real-world practices. .