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Titolo	Competition-Based Neural Networks with Robotic Applications / / by Shuai Li, Long Jin
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Descrizione fisica	1 online resource (XV, 121 p. 44 illus.)
Collana	SpringerBriefs in Applied Sciences and Technology, , 2191-5318
Disciplina	006.32
Soggetti	Computational intelligence Control engineering Robotics Automation Artificial intelligence Neural networks (Computer science) Computational Intelligence Control, Robotics, Automation Artificial Intelligence Mathematical Models of Cognitive Processes and Neural Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Competition Aided with Discrete -- Time Dynamic Feedback -- Competition Aided with Continuous -- Time Nonlinear Model -- Competition Aided with Finite -- time Neural Network -- Competition based on Selective Positive-negative Feedback -- Distributed Competition in Dynamic Networks -- Competition-based Distributed Coordination Control of Robots.
Sommario/riassunto	Focused on solving competition-based problems, this book designs, proposes, develops, analyzes and simulates various neural network models depicted in centralized and distributed manners. Specifically, it defines four different classes of centralized models for investigating the resultant competition in a group of multiple agents. With regard to distributed competition with limited communication among agents, the book presents the first distributed WTA (Winners Take All) protocol,

which it subsequently extends to the distributed coordination control of multiple robots. Illustrations, tables, and various simulative examples, as well as a healthy mix of plain and professional language, are used to explain the concepts and complex principles involved. Thus, the book provides readers in neurocomputing and robotics with a deeper understanding of the neural network approach to competition-based problem-solving, offers them an accessible introduction to modeling technology and the distributed coordination control of redundant robots, and equips them to use these technologies and approaches to solve concrete scientific and engineering problems.