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Titolo	Uncertainty in Complex Networked Systems : In Honor of Roberto Tempo // edited by Tamer Basar
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Descrizione fisica	1 online resource (619 pages)
Collana	Systems & Control: Foundations & Applications, , 2324-9749
Disciplina	519.3
Soggetti	System theory Automatic control Systems Theory, Control Complex Systems Control and Systems Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Uncertainty systems: time-varying versus time-invariant uncertainties -- Cooperative resilient estimation of uncertain systems subjected to a biasing interference -- Robust static output feedback design with deterministic and probabilistic certificates.-Robust control against uncertainty quartet: a polynomial approach -- Randomization in robustness, estimation, and optimization -- Stabilization of deterministic control systems under random sampling: Overview and recent developments.-Robust design through probabilistic maximization -- Compressive sensing and algebraic coding: Connections and challenges -- Stochastic optimization for energy storage allocation in smart grids in the presence of uncertainty -- A data-driven basis function approach in non-parametric nonlinear system identification -- Perspectives on network systems and mathematical sociology -- Distributed randomized algorithms for PageRank computation: Recent advances -- Distributed optimization in multi-agent networks using one-bit of relative state information -- Analysis of a distributed consensus based economic dispatch algorithm -- Impact of quantized inter-agent communications on game-theoretic and distributed optimization algorithms -- Fault diagnosis for

uncertain networked systems -- Fault diagnosis for uncertain networked systems.

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## Sommario/riassunto

The chapters in this volume, and the volume itself, celebrate the life and research of Roberto Tempo, a leader in the study of complex networked systems, their analysis and control under uncertainty, and robust designs. Contributors include authorities on uncertainty in systems, robustness, networked and network systems, social networks, distributed and randomized algorithms, and multi-agent systems—all fields that Roberto Tempo made vital contributions to. Additionally, at least one author of each chapter was a research collaborator of Roberto Tempo's. This volume is structured in three parts. The first covers robustness and includes topics like time-invariant uncertainties, robust static output feedback design, and the uncertainty quartet. The second part is focused on randomization and probabilistic methods, which covers topics such as compressive sensing, and stochastic optimization. Finally, the third part deals with distributed systems and algorithms, and explores matters involving mathematical sociology, fault diagnoses, and PageRank computation. Each chapter presents exposition, provides new results, and identifies fruitful future directions in research. This book will serve as a valuable reference volume to researchers interested in uncertainty, complexity, robustness, optimization, algorithms, and networked systems.

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