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Titolo	Intelligent Monitoring, Control, and Security of Critical Infrastructure Systems // edited by Elias Kyriakides, Marios Polycarpou
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Descrizione fisica	1 online resource (XII, 359 p. 144 illus., 31 illus. in color.)
Collana	Studies in Computational Intelligence, , 1860-949X ; ; 565
Disciplina	620
Soggetti	Computational intelligence Electrical engineering Quality control Reliability Industrial safety Computational Intelligence Communications Engineering, Networks Quality Control, Reliability, Safety and Risk
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Preface -- Critical infrastructure systems – basic principles of monitoring, control, and security -- Electric Power Systems.- Telecommunication Networks -- Water Distribution Networks Transportation Systems -- Algorithms and tools for intelligent monitoring of CIS -- Algorithms and tools for intelligent control of CIS -- Algorithms and tools for risk/impact evaluation in critical infrastructures -- Infrastructure interdependencies – modeling and analysis -- Fault diagnosis and fault tolerant control in CIS -- Wireless sensor network based technologies for CIS -- System-of-Systems approach -- Conclusions.
Sommario/riassunto	This book describes the challenges that critical infrastructure systems face, and presents state of the art solutions to address them. How can we design intelligent systems or intelligent agents that can make appropriate real-time decisions in the management of such large-scale, complex systems? What are the primary challenges for critical

infrastructure systems? The book also provides readers with the relevant information to recognize how important infrastructures are, and their role in connection with a society's economy, security and prosperity. It goes on to describe state-of-the-art solutions to address these points, including new methodologies and instrumentation tools (e.g. embedded software and intelligent algorithms) for transforming and optimizing target infrastructures. The book is the most comprehensive resource to date for professionals in both the private and public sectors, while also offering an essential guide for students and researchers in the areas of modeling and analysis of critical infrastructure systems, monitoring, control, risk/impact evaluation, fault diagnosis, fault-tolerant control, and infrastructure dependencies/interdependencies. The importance of the research presented in the book is reflected in the fact that currently, for the first time in human history, more people live in cities than in rural areas, and that, by 2050, roughly 70% of the world's total population is expected to live in cities.

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