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	Descrizione fisica	1 online resource (xi, 264 pages) : illustrations
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	Nota di contenuto	1. System Design Using Cultural Algorithms -- Introduction -- The Cultural Engine -- Outline of the Book: Cultural Learning in Dynamic Environments -- 2. The Cultural Algorithms Toolkit -- Cultural Algorithms Toolkit Overview -- Downloading and Running CAT -- The Repast Simphony System -- Knowledge Sources -- Fitness Functions -- Conesworld -- The Logistics Function -- Cultural Algorithms Toolkit Sample Runs: Conesworld -- Cultural Algorithms Toolkit Sample Runs: Other Problems -- 3. Problem Solving Using Social Networks in Cultural Algorithms with Auctions -- Introduction -- Cultural Algorithms -- Subcultured Heterogeneous Networks -- Auction Mechanisms -- The Cultural Engine -- Cones World -- Experimental Framework -- Results -- Conclusions -- References -- 4. Using Common Value Auction In Cultural Algorithm to Enhance Robustness and Resilience of Social Knowledge Distribution Systems -- Cultural Algorithms -- Common Value Auction -- Cones World -- Dynamic Experimental Framework -- Results -- Conclusions and Future Work -- 5. Optimizing AI Pipelines: A Game-Theoretic Cultural Algorithms Approach -- Introduction -- Overview of Cultural Algorithms -- Cultural Algorithms Knowledge Distribution Mechanisms -- Primer on Game Theory -- Game Theoretic Knowledge Distribution -- Continuous-Action Iterated Prisoner's Dilemma -- Play -- Payoff -- Outcome -- Learning Rate Adjustment --

Sommario/riassunto

""The Foundations of Social Intelligence" covers a wide range of the basic framework of cultural algorithms, from the history of its development to how other nature-inspired algorithms can be expressed. It also demonstrates how the social organizational structures that make up human socio-political systems can be modeled in terms of cultural algorithms. It explores how the learning process is expressed in thermodynamic terms as a cultural engine, while proposing several social metrics to assess their performance. Cultural algorithms are a computational framework for understanding human social evolution based upon anthropological and archaeological models of cultural evolution. The key is how we can we use cultural algorithms as a vehicle to understand why these building blocks are ubiquitous across the globe in computational terms. The performance of the basic social models are compared against each other relative to the different categories of complex systems problems"--