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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to Swarm Robotics -- Short Introduction to Robotics -- Short Journey Through Nearly Everything -- Scenarios of Swarm Robotics -- Modeling Swarm Systems and Formal Design Methods -- Collective Decision-Making -- Case Study: Adaptive Aggregation -- References -- Index.
Sommario/riassunto	This book provides an introduction to Swarm Robotics, which is the

application of methods from swarm intelligence to robotics. It goes on to present methods that allow readers to understand how to design large-scale robot systems by going through many example scenarios on topics such as aggregation, coordinated motion (flocking), task allocation, self-assembly, collective construction, and environmental monitoring. The author explains the methodology behind building multiple, simple robots and how the complexity emerges from the multiple interactions between these robots such that they are able to solve difficult tasks. The book can be used as a short textbook for specialized courses or as an introduction to Swarm Robotics for graduate students, researchers, and professionals who want a concise introduction to the field. Provides a quick introduction to the robotics aspect of swarm intelligence; Outlines how swarm robotics is relevant as a key technology in robotics, transport, and medicine (nanorobotics), with many references to real world examples and popular literature; Allows readers to acquire the fundamentals of how to design and model a swarm robotic system, including relevant mathematical definitions and tools. "Given the increasing number of sophisticated robots sharing our lives, the study of how large number of robots, so-called robot swarms, interact among themselves and with fellow humans to organize their activities and perform ever more complex tasks is becoming of paramount importance. With this book on swarm robotics, Heiko Hamann gives an important contribution to the foundations of this exciting research field." Prof. Marco Dorigo, Ph.D. Directeur de Recherches du FNRS IRIDIA Université libre de Bruxelles Belgium.