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Nota di contenuto	1. A warm-up to models -- 2. Getting started -- 3. Reckoning with the computer -- 4. A virtual surfer for the web -- 5. A network of capillaries -- 6. Predators and preys in the maths ocean -- 7. Take-home message -- 8. Solutions to exercises.
Sommario/riassunto	In this book we describe the magic world of mathematical models: starting from real-life problems, we formulate them in terms of equations, transform equations into algorithms and algorithms into programs to be executed on computers. A broad variety of examples and exercises illustrate that properly designed models can, e.g.: predict the way the number of dolphins in the Aeolian Sea will change as food availability and fishing activity vary; describe the blood flow in a capillary network; calculate the PageRank of websites. This book also includes a chapter with an elementary introduction to Octave, an open-source programming language widely used in the scientific community. Octave functions and scripts for dealing with the problems presented in the text can be downloaded from https://paola-gervasio.unibs.it/quarteroni-gervasio This book is addressed to any student interested in learning how to construct and apply mathematical models.