



A Computable Universe: Understanding and Exploring Nature as Computation

By Hector Zenil

World Scientific Publishing Company. Hardcover. Book Condition: New. Hardcover. 856 pages. Dimensions: 9.1in. x 6.3in. x 2.0in. This volume, with a foreword by Sir Roger Penrose, discusses the foundations of computation in relation to nature. It focuses on two main questions: What is computation? How does nature compute? The contributors are world-renowned experts who have helped shape a cutting-edge computational understanding of the universe. They discuss computation in the world from a variety of perspectives, ranging from foundational concepts to pragmatic models to ontological conceptions and philosophical implications. The volume provides a state-of-the-art collection of technical papers and non-technical essays, representing a field that assumes information and computation to be key in understanding and explaining the basic structure underpinning physical reality. It also includes a new edition of Konrad Zuses Calculating Space (the MIT translation), and a panel discussion transcription on the topic, featuring worldwide experts in quantum mechanics, physics, cognition, computation and algorithmic complexity. The volume is dedicated to the memory of Alan M Turing -- the inventor of universal computation, on the 100th anniversary of his birth, and is part of the Turing Centenary celebrations. Readership: Graduate students who are specialized researchers in computer science, information theory, quantum theory...



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